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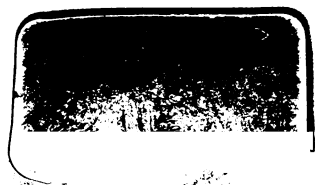
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THE
LETTER-PRESS PRINTER :

A COMPLETE GUIDE TO THE ART OF PRINTING ;

CONTAINING

PRACTICAL INSTRUCTIONS FOR LEARNERS

AT

CASE, PRESS, AND MACHINE.

EMBRACING

THE WHOLE PRACTICE OF BOOK WORK, WITH DIAGRAM AND COMPLETE SCHEMES
OF IMPOSITIONS; JOB WORK, WITH EXAMPLES; NEWS WORK, COLOUR
WORK, TO MAKE COLOURED INKS, TO WORK PRESS AND MACHINE,
TO MAKE ROLLERS, AND OTHER VALUABLE INFORMATION.

BY
JOSEPH GOULD,
PRINTER.

LONDON :
FARRINGTON & CO., 31, FETTER LANE, FLEET STREET
MIDDLESBROUGH: J. GOULD, PRINTER, SOUTH STREET.

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1878.

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P R E F A C E .

SOME few years since I wrote part of this Manual, but other matters at that time caused the idea of publishing it to be put on one side. A couple of years ago, however, unexpectedly receiving a note from a former fellow-compositor, intimating that he would be glad of a month or two in the country, after a hard winter's work in London, revived the idea of publishing the Manual, as by that means my friend could be accommodated without interfering with other office arrangements. He accordingly came; and after we had fortified ourselves by taking a fortnight's walk northward through several English counties and part of Scotland, this little work was commenced. The delay in publication has been caused by the work being laid aside at the expiration of each visit of two or three months, to leave an "opening" for the following summer.

My first object in writing was to endeavour to explain the various systems of working as practised by a journeyman printer; and to give Examples where I considered explanation would be insufficient or difficult. As far as I have been able, I offer in the following pages the experience of one who has worked

at the various branches of the business which are treated upon and I have tried to make all so plain that I hope it cannot fail to be understood.

Above all, it has been my wish, in producing this Manual, to make it a useful and an instructive guide to the actual mechanical and other operations to be gone through in the course of working at case, press, or machine, and to do so in the most comprehensive manner. It has also been my aim to offer such instruction to the jobbing compositor and the news hand as would enable them to take a frame in any book-house, and to show the book or news compositors how to make themselves useful in a jobbing office.

The branch of the business upon which I had least personal experience—the daily newspaper—would have been passed over but for the kindness of a friend, a London morning news-hand, who supplied an article on that subject.

My hearty thanks are due to our mutual friend Mr. Self, Secretary of the London Society of Compositors, for his kindness in looking over the book-work portion of this work, for his voluntary offer of any assistance I might need, and for his encouraging and friendly assurances.

Various tables have been introduced, some of which are copied from "The Compositor's Handbook," published in 1854, by Simpkin, Marshall, and Co.; and the remainder from other sources.

J. G.

November, 1876.

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INTRODUCTION.

THE INVENTION AND INTRODUCTION OF PRINTING INTO ENGLAND.

WE cannot point out with certainty how, when, or by whom the art of Printing was first introduced into Europe. Various countries lay claim to the honour; but the danger of prosecution to which the first printers were liable, in the superstitious age which gave birth to the art, compelled them to preserve secrecy. Gutenberg, who was born in the year 1400, however, is by most historians considered to have been the inventor; at all events, the old books tell us that the "judicial records of Strasbourg seem to establish the fact that Gutenberg constructed a press in that city as early as 1436;" and we are further informed: "When Gutenberg's partner (Dritzehen) died, a litigation followed, in which it was proved, from the testimony of workmen employed that a press for printing had been secretly constructed, and that it had been spirited away privately by Gutenberg after the death of his partner. One John Dunning testified before a magistrate at Strasbourg, in 1439, that he had three years before received one hundred florins for work done on a press." Other authorities, however, say that Gutenberg, in connection with John Faust, who furnished the requisite funds, set up a printing office in Metz so early as the year 1430.

The pages printed from at first were engraved blocks of wood, so that when used once they were of no further service, unless

required for the same work they had formerly been used for. This was, of course, a most expensive and slow process of preparing the pages for press. To prevent this waste of material and time, the practice of sawing the separate letters out of the blocks of wood was resorted to, so that they could be used several times. After which letters were cut on separate pieces of wood. The idea, however, of changing these clumsy wooden types for those of metal was conceived, and for some time each metal type was cut singly by hand. After having advanced so far in the art as to engrave and use moveable metal types, Gutenberg and Faust undertook what would appear in those days a work of almost incredible magnitude, the printing of the Bible! In the course of eight years, however, the first printed Bible appeared.

The first books printed were in imitation of manuscripts, and were passed off as such, in order the better to ensure secrecy. Great numbers of copies, however, being in circulation excited suspicion by their uniformity, and the unfortunate printers were charged with being in league with the devil.

In the year 1456, Peter Schoeffer, a man who had become very skilful in the printing business, privately cut matrices for the whole alphabet, and thus completed the invention of casting metallic type.

The first book printed with the cast metallic type, was *Durandi Rationale*.

The generality of English chroniclers agree that printing was first introduced into and practised in England in 1471 by William Caxton, who opened a printing office within the precincts of Westminster Abbey. William Caxton had learned the art in Flanders, and to some extent practised it there. He brought his printing materials from that place. It is supposed that the first work he issued was "The Game and Playe of the Chesse: Translated out of the French, and imprinted by William Caxton. Fynysshed the last daye of Marche, the yer of our Lord God a

thousand four hundred lxxiiij ;" although it is not quite certain whether this or another of his works, "A Boke of the Hoole Lyf of Jason," is the earliest specimen of typography in England.

He was succeeded by Wynkin de Worde, who continued the office in Caxton's house at Westminster till 1502, when he removed to the Sun, in Fleet Street.

Not many years after Caxton had established himself in Westminster, the art was introduced into Oxford and St. Albans. Wynkin de Worde had a shop in Oxford for the sale of his works printed in London. Printing in Oxford, however, continued in a very low state until the time of Elizabeth, when the Earl of Leicester, who was Chancellor of the University, set up a press at his own expense, and appointed Joseph Barnes as University Printer, in 1585. A printing office was established in a monastery of Benedictines at St. Albans, in 1480. The art was introduced into York in 1509, by the son of an Antwerp printer, Hugh Goes, who afterwards removed to Beverley and subsequently to London. Printing was introduced into Cambridge shortly after Caxton's establishment in London, but the exact date is unknown. Wolsey set up a press at Ipswich in 1538; and the art was brought to Norwich in 1570.

Since then the art has gradually spread, so that at the present time every town, and even village of any importance, can boast of its press. The old wooden press, used in the infancy of printing, has entirely disappeared, or is preserved only as a curiosity, having been supplanted by presses of vastly improved construction; now the most improved hand presses are gradually being superseded by the printing machine, which but a few years ago, comparatively, was introduced to the trade, but has now become so general that nearly every printing establishment has its platen or cylinder machines. Improvement has closely followed improvement in every branch of the art, but more especially in the mechanical department. To meet the enormous

demand for news, one-, two-, four-, six-, and eight-feeder machines were introduced; and, now they in their turn are, in many instances, put to one side to make room for the Walter, the Howe, the Victory, and other web printing machines. In fact, printing has advanced with such rapid strides that the execution of jobs which would have required months or years in former times to complete, can now be thrown off in as many hours or days.

A business that but a few years ago was greatly overstocked with workers, and has now absorbed all who are competent and willing to work, at increased wages and shorter hours, and which promises to almost outstrip in demand for labour the supply, is surely worthy of effort—and a great one—to learn; and it is to be hoped that the rising generation of young printers will exert themselves as strenuously to be in advance of the last as our mechanical geniuses have done to introduce improved machinery and other appliances wherewith to replace the old.

THE LETTER-PRESS PRINTER.

BOOK-WORK.

DISTRIBUTING.

This is one of the most important operations of the compositor, because carelessness in this will undoubtedly cause much loss of time and trouble, besides (unless the matter is most carefully read and corrected in the stick) giving an impression of inattention and slovenliness in the workman; for nothing looks worse, or lowers the compositor more in the eyes of his employers and fellow-workmen, than "dirty" proofs.

Before commencing to distribute, first thoroughly wash and rinse your type, either on galleys or in the forme, unlocked on a letter-board in the trough; then take a convenient quantity on your composing-rule, or a lead, in your left hand, letting the matter rest across the third and little fingers and against the palm of the hand, keeping it steady with the thumb and other fingers. With the forefinger and thumb of the right hand take a word or two from the uppermost line of the handful, at the same time observe what the words are, then drop each letter one by one into its proper "box," being extremely careful that none be thrown into the wrong one. As very much depends upon distribution, the compositor should be most careful that no type falls into a wrong portion of his case.* Also carefully note the spaces

* Since writing the above and following pages I have been favoured by the loan of "STOWER'S GUIDE TO THE ART OF PRINTING," (published 1808), from which I extract the following:—

"The compositor will find it to his advantage composing from a clean case, though he may be longer in distributing it. A man loses double the time in correcting that he imagines he saves from quick and slovenly distribution."

between the words, so that they may be properly separated and thrown into their proper boxes. It is best to mix thin and middle spaces, and keep the thick spaces separate. After some practice the operation of distributing becomes almost involuntary, and may be performed with very great rapidity.

COMPOSING.

COMPOSING is the term used to denote the act of arranging different types into words and sentences; and is one of the most important operations in the art of Printing. What is most essential to the beginner is a thorough knowledge of the English language, spelling, and punctuation; he should also understand what is meant by roman, italic, condensed, expanded, two-, four-, and six-line, antique, script, ornamental, and other types; what are dashes, leaders, leads, quotations, furniture, mallets, shooting-sticks, and planers; the various names of the different sizes of type and other things he will come in contact with in all printing offices. Having thoroughly learned the "lay" of the cases, and been instructed in the first rudiments of the trade, the apprentice may commence to "set."

What is most coveted by the ambitious typo. is to be able to compose with quickness; and being able to pick up types swiftly, combined with the after-advantage of an almost spotless proof, constitutes what is considered a good compositor. We find, however, that, compared with really good compositors, there are a preponderance of very moderate and slow workmen. The question then occurs, Why cannot one compositor work with as much quickness as his companion, if he be endowed with as much talent and natural ability? There are many reasons why they do not; and it behoves all beginners, at least, to guard as much as possible against evil habits which are easily acquired when learning, but which, once acquired, are hard to break off. To guard against those habits, however, we must first be acquainted with them. Many who would otherwise be swift compositors have their quickness neutralized by the acquirement of false movements, and instead of being able to perform their work with

expedition and ease, are only able (and sometimes with great exertion) to do an average amount of work. Let us glance at a few of those drawbacks; and let the young compositor by careful training endeavour to avoid them. One of the most usual is the habit of picking up a type, and striking the composing rule or stick to turn it, thus wasting as much time almost as is required to pick up another letter. Some have a habit, as soon as they have taken up a type properly, instead of bringing it straight to the stick and depositing it there, of raising their hand so as to describe a half circle, which of course wastes time. Others (always in a hurry) snatch at the type apparently at random, and after two or three "attempts" manage to seize one; whereas, if they had gone coolly to work, two might have been placed in the stick during the time. Then, again, some have a habit, in their anxiety to be quick, of striking the bottom of the type on the top of the composing-rule, rendering another movement necessary; and many have a habit of shaking the body, and nodding the head, sometimes to a rather violent extent, adding much, of course, to their fatigue. Although few compositors are entirely free from all false movements, we find many who have several combined, and some, being naturally slow, losing time in worse than useless movements, compose at a very slow rate indeed.

To compose with ease is a most important thing to be considered; therefore we must study to attain an easy position. Some compositors prefer high frames—the height of the breast;*

* "What to a learner may appear fatiguing, time and habit will render familiar and easy; and though to work with his cases on a level with his breast, may at first tire his arms, yet use will so inure him to it, that it becomes afterwards equally unpleasant to work at a low frame. His perseverance in this mode will be strengthened by the reflection, that it effectually prevents his becoming round-shouldered, a distinguishing mark by which compositors above the common stature are generally known. This method will likewise keep the body in an erect position, and prevent those effects which result from pressure on the stomach."—STOWER.

"The slow compositor is he who stands up to a case too high, clutches his stick too tightly, and makes false motions. The man who stands to a low case, holds his stick loosely in his hand, carrying it around over the boxes, so that the picking hand has a shorter distance to travel, and brings a letter every time, is the man you read about in great feats of type picking."—AMERICAN NEWSPAPER REPORTER (1874).

but high frames do not conduce to ease, the arms soon becoming tired, from being removed so far from their natural position; although many urge that use is second nature, and that after using high frames for a few weeks no inconvenience is felt from them. Others prefer lower frames, reaching about two inches above the elbow, which, I think, are preferable. At such frames the compositor's arms are in a much easier position, and he can follow his right hand with his stick almost all over the lower case. At lower frames, also, the body may be kept erect with as much ease as at the higher; and the elbows kept closer to the sides, which will be found to conduce much both to ease and expedition. However, let it be understood, in offering the foregoing remarks, I give them only as my opinion of the proper height of the frames, in conjunction with the easiest and most expeditious mode of composing; and that, although others may differ from me, I believe all who give an unprejudiced trial to both high and low frames will prefer the latter.

In beginning to compose, try to arrange something like a system;* and studiously endeavour to learn it so perfectly that it shall become a thoroughly confirmed habit to do what is to be done properly; and remember, that causing the hands to dart backwards and forwards with great swiftness is not of itself quick composing, but rather endeavour to act steadily and collectedly, so that each time the hand is moved from case to stick a type may be deposited therein without any second movement. Then to commence: taking the composing-stick in the left hand, with the thumb reaching the composing-rule, cast your eye on the partition of the case from which you require a type, and having

* "He should not be too impatient to gain the reputation of a quick compositor; his principal study should be to acquire a proper method, though the progress be slow. This attained, expedition will follow from practice

"It is not by velocity of movement that expedition is to be gained, either in composing or distributing; it is to system, without which their attempts may have the appearance of expedition, but produce only fatigue from anxiety and false motion. To system, therefore, we would particularly call their attention, and as clean distribution generally produces clean composition, which not only saves time at the stone, but acquires them a respectable name, they cannot be too attentive to that part of their business."—STOWER.

fixed upon one, pick up at the first attempt and secure it in your fingers, before removing the eye ; and while conveying it to, and placing it with all convenient rapidity in, the composing stick, fix your eye on the next type you require, and as before, while taking it to your stick, fix your eye on the type next required ; and so on, using as much expedition in all movements as possible, until the line is composed. In all your movements let the stick follow the right hand as closely as possible, which in composing is most important, saving an immense amount of time, the distance the hands travel with each type from the case to the composing-stick being thus reduced to a minimum.

When a line is composed, justify it either by spacing out or getting-in ; and while so engaged read it over carefully. While inserting the last spaces, and lifting the setting-rule and placing it upon the line already finished, the compositor must look to his copy for the next words to be set up. He should never take more in his mind than convenient, although certainly the more the better, if it can be taken with certainty, so that "outs," "doubles," and wrong words are avoided.

SPACING.

In spacing out a line place the additional space between the words that will least show the extra space ; and uniformity in spacing must be strictly observed, in bookwork especially, as nothing looks worse than one line wide-spaced and the following one thin-spaced. The thick space is the proper division between each word ; but as it would be impossible to space all lines with that alone, it behoves the compositor to endeavour so to space that the inequalities shall be least noticed. In reducing the space, also, care should be exercised, and the spaces following the points must be reduced in proportion. After the comma no extra space is needed ; but after the semi-colon and colon an en quadrat should be put, and after a full-point an em quadrat. With regard to general uniformity in Composition, "J. B. C.," in an excellent article which appeared in the *Printers' Register*, Nov. 6, 1871, says :—

"Uniformity in Composition is of great consequence in the setting-up of type ; for by attention being paid by the compositor

to this matter, the pages of a work are often improved in appearance, and the time of the reader saved to a considerable extent. It is a good practice, where any particular style is to be observed, for the overseer to issue printed or written instructions to the compositors as well as to the readers. Some houses have a totally different style of using capitals and points to another; some, again, prefer wide spacing, while others maintain that an average thick space is sufficient throughout the line. Oftentimes where a volume is to be reprinted, and the type is somewhat thicker in set than that used by the previous printer, the order goes forth to space close, so as to get in within the required limits.

"We knew of a printer who would rather see a widely-spaced line than submit to a word being divided; and preferred leaded matter to be double-thick spaced, or even as much as an en quad and thick space between the words. Within sight of this office was another, where any division of a word was allowed—provided it was a legitimate one—rather than the line should exceed thick spacing. Even such a word as 'John-ny' was considered passable, with the 'ny' turned over into the next line. We were brought up in the first-named of these two houses, and had been so accustomed to wide spacing all through our apprenticeship, that it became quite natural to us to adopt the same system elsewhere; but circumstances led to our being employed in the last-named office, and the first 'take' of copy which fell to our share was about two and a-half pages of 12mo Long Primer. Judge of our astonishment, when the proof came out, to find that we had to overrun every line and reduce the spacing between every word—causing us to re-make-up two-thirds of a sheet by the less number of lines the 'take' then made; and yet there were not a half-a-dozen literal errors in the whole of it. The worst part of all was a note that was appended to the proof, to the effect that whoever had set-up the matter thus, 'with so many pigeon-holes between the words,' was to be discharged as soon as he had rectified it. However, upon an explanation being offered, we were allowed to continue in the establishment, and rose in the estimation of the employer whose anger had thus been aroused; but we took great care to study the style of the

house, and act up to it. We have mentioned this circumstance to show how varied are the regulations of different offices.

“With regard to *Capitals*. Some houses keep the caps. down as much as possible, whilst others will use them very frequently. Houses where religious books are printed, make it a rule to cap. such words as He, His, Him, Whom, &c., when alluding to the Deity; in addition to these capitals, High Church works especially are found with GOD, CHRIST, HOLY GHOST, and all words referring to the Trinity, in small caps., and sometimes where extra emphasis is desired, a copious use of Italic and capitals is indulged in; but it causes the page to have more the appearance of an advertisement, instead of the neatness which should always grace the text of a volume.

“Then as to *Figures*. How frequently do we see, in the same article, the age of a man, for instance, in figures at the commencement of an article, whilst further on it is put in words. This arises from the carelessness of both the compositor and the reader. Some houses prefer the ages of persons, or any other numbers, unless in statistical matter, in words rather than figures. Others prefer a liberal use of figures to save space. Some, again, adopt the plan of putting all numbers under a hundred in words, and all over a hundred in figures. But newspapers stick to the plan of putting all numbers under ten in figures: this often has a very disagreeable look to a person of taste. Now figures, unless in tabular matter, do not improve the beauty of composition; on the contrary, like a too liberal use of capitals, they produce a certain ugly prominence, that destroys the effect of the page. What can look worse than the following example, which is similar to others frequently met with in the columns of a newspaper, and is a style which we decidedly object to. After giving the details of a dreadful accident and loss of life, the report gives a list of persons who perished, with their ages, &c.:—

“‘Esther Thompson, 42; Joseph Thompson, four; Esther Thompson, nine (children of above); George Jones, 62; Ellen Smith, 10; Cornelius Smith, eight; Arthur Smith, two. There were 10 others injured, nine of whom are but slightly hurt.’

“Why not have put all the ages in figures? The paragraph would have been more uniform, and looked far better. Our

opinion is, that figures should be avoided as much as possible, excepting in such pars. as the one we have quoted, and other statistical matter and tables; but if they are used, the system should be adopted throughout an article—in fact, throughout a work—whatever the number may be, whether one or a thousand.

“We have been led to make these remarks from the various styles which we find casual hands adopt when occasionally called in to assist, and the careless manner in which a majority of them perform their work. It shows plainly, that for a man to be a thorough compositor, he requires to see as many changes as possible as soon as he completes his apprenticeship; for experience in the different modes practised in the different offices will prove of the greatest value to him when he settles down in a steady situation. At the same time, unless he gives his mind to study these various styles, and in composition to adhere to the rule of the house in which he may be employed, his experience will not be of much avail.”

CORRECTING.

Correcting is a necessary evil, as it not only diminishes the earnings of the compositor but is prejudicial to his health through leaning over the stone. It is, however, the carelessness and inattention of the workman in many instances that cause the nuisance, and I may say the disgrace, of a foul proof. Certainly, in the confusion, noise, “rush,” and unnecessary talking in many badly-regulated offices, it is not to be wondered at that the compositor’s attention is sometimes distracted, and finds it difficult to concentrate his mind on his work as much he could wish. But in some instances neither the disgrace of a foul proof, nor the trouble and waste of time in correcting it, enforce on careless workmen becoming attention.

As soon as a proof is put into the hands of the compositors, one who has the first pages in the sheet,* if they cor-
rections, must lay up and carefully unlock the formes, let the quoins slack, but in their places. He must then gather corrections between the forefinger and thumb of his left ha-

* The first in a sheet does not in every house lay up the formes, but give the different modes of working in another part of this work.

in his composing-stick, and taking a space-box he commences to correct. He raises the line containing his first correction with the bodkin in his right hand and the forefinger of his left, by pressing them against each end of the line, just sufficiently high to allow of any wrong type being easily extracted. He then takes out the wrong type and inserts the right one, and should the space require reducing or altering in any manner, he can easily do that before he allows the line to drop into its place. While engaged correcting the first error, look for the next, and proceed in the same manner until all literals are corrected. Should there be any "outs," "doubles," or anything requiring overrunning, take out a few lines near where the alteration is required, and put them on a galley with the last line to the top of the galley. If an "out" makes nearly a line, it will be easy to so space the following lines as to make even without overrunning, and without any appearance of uneven spacing. Should a word or two require getting in, notice whether any of the lines before or after the one requiring the insertion can be so reduced as to take in a word of the adjoining line, and by reducing the spacing judiciously in a few lines the words may be got in. Should there be a double of a word or two, take a few lines in the same manner on your galley, and space out carefully so as to turn a word or two from the adjoining lines into the one containing the double to fill up the space required. Wherever a word is to be altered, lift the line into the stick so as to insure even spacing, and wherever the spacing of a line requires altering, it is the quickest and most satisfactory manner to do it in the stick. It is not advisable to have the lower case on the stone, and take out the corrections as they are required, as some compositors do, for many reasons: for, by gathering the corrections between the finger and thumb they act as a check, should any have been overlooked in making the alterations; but by taking the corrections from the lower-case as they are wanted there is no check whatever, should corrections be left unmade, so that the further annoyance of a revise, with its consequent loss of time, would have to be corrected. So soon as the first in the sheet has corrected he must pass the proof to the compositor whose matter follows; and so on to the end of the sheet.

TAKING COPY.

In taking copy for bookwork always make enquiries as to measure, whether anything special is required to be observed in the punctuation, and whether anything in particular must be "kept up" or otherwise, as a few instructions may save much time and trouble. In many cases, however, the compositor is allowed to use his own discretion as regards punctuation. When the copy in hand is finished enquire of the compositor who has the next "take" whether you have any on his copy to finish. On bookwork it is a very rare occurrence for the compositor to "make even."

TITLES, DEDICATIONS, &c.

TITLES.

In setting titles the taste and judgment of the compositor must be exercised; plain types, in my opinion, only ought to be used, and rules are usually omitted. All catch lines should be set in small capitals; and the principal lines in fine light romans. Where much display is required, of course an occasional line of full-faced or expanded roman, Old English, or other plain type may be used with good effect. The printer's or publisher's imprint must be put at the bottom of the title.

I might here give more explicit directions for setting titles, but considering too many directions are likely to embarrass the learner, I intend giving one or two illustrations of titles further on in this work; for, I believe, doing so will be the plainest method of instruction.

DEDICATIONS.

The dedication must be placed on the third page, and is generally confined to one page; it ought to be neatly displayed with small caps and caps of the same type, or smaller than the body of the work. The name of the person to whom the work is dedicated is usually put in larger capitals, and the

author's name, &c., in smaller capitals than those used throughout the dedication. The words "Is dedicated to," &c., are frequently inserted in one line of church-text.

PREFACES

Are set either in a size larger or smaller than the body of the work, and are either leaded out or not, according to the taste of the printer or author. The running title is set in the same type as the body of the work, and the folios used are sometimes lower-case numerals.

It is also customary in some houses to set the preface in the same type as the work, but to make a distinction by inserting extra leads. If an introduction be given it is set in the same type with or without any distinctive feature, according to taste.

CONTENTS.

The summary of contents follows the dedication; the type used being in every instance smaller than the body of the work. The usual method is to set the summary in caps and small caps, with the folios at the end of the lines. The index is put at the end of the work, and should be alphabetically arranged.

HEAD-LINES.

Head-lines are the lines at the top of each page, and usually contain the title of the work on the even page and the subject of the chapter or page on the odd, and also the folios. The folio is placed at the beginning of the line on the even and at the end of the line on the odd page. The head-lines are most usually set in the small caps of the type the work is set in; although, as tastes differ, some are set in italic caps or lower-case—especially in magazines—and in some instances a double thin or single thin rule is put after the head-line. Where the pages of a work are in columns, a full single or double rule ought to be placed at the head of each. Chapter headings are set in capitals larger than the body of the work; sometimes in neat titling letter; and if explanatory headings are used they are set in type two or more sizes less than the text.

SIGNATURES.

Letters of the alphabet are placed at the bottom of certain parts of each sheet to guide the bookbinder in arranging and folding the sheets. The first sheet or half-sheet of a work is usually commenced with signature B; the title, preface, &c., (which is left to the end of the work,) being considered sig. A. letters J, V, and W are omitted. Should the number of sheets exceed the number of letters in the alphabet, the letters are doubled, or a figure placed before them, thus—AA, BB, 2B, &c.

In some offices figures instead of small caps are used for signatures.

In half-sheets of quarto, octavo, &c., where the sheets are folded without cutting, the signature is placed on the first page only; but in sheets of quarto, octavo, &c., even although they can be folded without cutting, signatures must be placed on the first and third pages—on the third page to indicate to the compositor and pressman that Sig. B2 is the companion form to Sig. B. The positions of all the signatures, however, will be given in the diagrams of impositions.

INITIAL LETTERS.

When initial letters larger than the type of the work are used at the beginning of chapters, they should be justified as to range exactly with the top of the type; and the first word ought to be set in capitals.

NOTES.

Should the work in hand have bottom notes, references must be put in their proper places while setting the text, and the compositor must put a piece of paper between the line containing the reference and the following one, to guide the clicker in making-up. The references usually used are the

Asterisk	*	Section	§
Dagger	†	Parallel	||
Double Dagger	‡	Paragraph	¶

Other references are also used; but those given are the most common. If there are notes to the notes, then superior letters or figures are sometimes used.

Notes are generally set in type two sizes smaller than the body of the work; and if the work be leaded, the notes are usually leaded with a thinner lead than the text, or set solid. Side-notes, like the folios, must be put at the beginning of the lines on the even and at the end of the lines on the odd pages of a work. They ought to be set, if possible, to even pica ems, so as to facilitate justification in making up.

INDENTION.

Common paragraphs are usually indented an em, although where the measure is wide, and sometimes in leaded matter, a greater indention is often given.

To "run out and indent"—sometimes termed a hanging indention—the first line of the paragraph is set full and the succeeding lines are indented.

Paragraphs begun with an initial letter, and those following chapter headings, are not required to be indented.

TO LAY A CASE.

Slide or lift the type out of the paper which contains it, either on to the imposing stone or a wide metal galley, keeping the cord round it. Then wet the type with a solution of soft soap and water, which has a tendency to prevent it from sticking when afterwards used. Untie the cord, take up a few lines of the same letter on a setting-rule, then place the rule on the edge of the box into which the types must go, and push them off into the box, being careful that none of the types fall into the adjoining boxes. Repeat until the boxes are completely full. Should any sorts remain after the cases are filled, keep them in lines, make up the lines into convenient sized pages, tie up, paper, and label them, so that the sorts may be at hand when required for future use. Of course where fount cases are used the surplus sorts are kept in them.

THE UPPER CASE.

I give the following illustration of the Upper Case as it is most commonly laid; but in some offices the "lay" is quite different; the capitals and small capitals being commenced on the fourth

line — A being placed in the X box, &c., while the accented letters, fractions, and other sorts are laid in the upper portion of the case. I have worked at cases where the figures were also laid in the upper portion of the case, although where the common "lay" of the upper case is discarded the figures are often put

U	O	W	J	++	+	=
F	N	V	D	ss	=	¶
E	M	T	OE	û	û	û
D	L	B	Æ	ó	ó	ó
C	K	R	Z	i	i	i
B	I	Q	Y	é	é	é
A	H	P	X	á	á	á
G	O	W	J	7		k
F	N	V	U	6	—	...
E	M	T	OE	5	9	û
D	L	S	Æ	4	£	ó
C	K	R	Z	8	0	i
B	I	Q	Y	2	9	é
A	H	P	X	1	8	á

in the lower case. It is best, where several uppers are required for the same found, to keep one for the accented letters like the above, and another for the different fractions, which ought to be placed where the accented letters in this case are laid; they can thus be kept together and are always at hand.

* The "lay" of the cases seems not to have been altered for nearly a century: for, on comparing Stower's with the present, I find they are the same in every particular, except as regards the double letters used in the old-faced types.

The following is the common "lay" of the Lower Case, and is almost universally used, with a few slight alterations, although it is capable of being greatly improved. But those who have the

courage to make many alterations and improvements in the "lay" of the lower case are usually rewarded by having their cases extensively "pied" by strangers who are occasionally called in to assist, and who, not being used to the altered lay, take some time to become sufficiently acquainted with it to be able to distribute into cases different from

Thin and Middle space	fl	ff	fi	En- quadrats.	En- quadrats.	Quadrats.	
	l	l	l			:	.
	;		s	w		:	.
	?	f		,	q	.	.
	l			p			
	,	a		y		r	
		i		o		a	
		e		h		Thick Space.	
	j	d		n		t	
	(
	œ	c		m		u	
	æ	b		l		v	
	—	&	ff	ff	Hair Space	z	x

those they have been used to, so that the common lay is usually interfered with as little as possible. A very great improvement, however, with little alteration of the cases, might be introduced by having the thin and middle spaces close to the thick, the distance between them as they stand causing extra labour and a great loss of time in spacing. In

double-cases the same "lay" is adopted, but the small-cap portion of the upper case is omitted.

IMPOSITION.

Imposition consists in laying down the pages of a sheet or half-sheet so that they shall back and follow each other in their proper order; in placing furniture and chases round them; and locking up the formes ready for proof.

MAKING-UP PAGES.

When ready to make up, take the proper number of lines to make a page, including headline and white after, and white at the bottom, press them tightly together; place a piece of riglet against the side and cut a nick exactly even with the white-line at the bottom of the page, and keep it as a guage wherewith to measure the length of the pages of the work.

In making up, the first page commencing the work is invariably "dropped," that is to say, commenced lower down the page than the cross-heading. The distance it is dropped is ruled by taste and the size of the pages. The compositor in making up his pages must make them all exactly the same length, for it will be impossible to "register" a forme properly unless this be done.

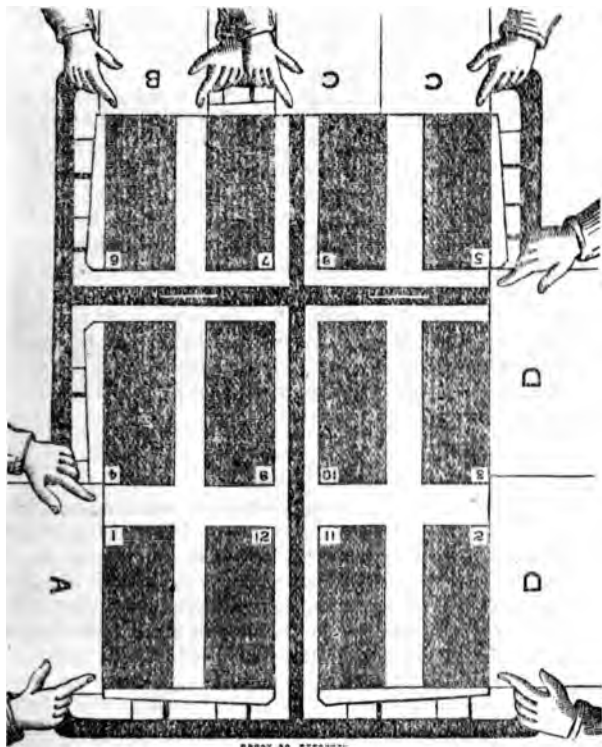
As each page is made up, it must be tied tightly with small twine, by passing the twine three or four times round, and then fastening it by pushing a noose between the cord and the type at the bottom of the page with the setting-rule, taking care to leave a loose end of the cord sufficiently long to facilitate the untying of the page after the furniture has been placed round it.

When the whole of the pages have been made up for a sheet they must be taken to the imposing-stone and laid down in their proper places, ready to have the chases and furniture placed round them.

MAKING THE PROPER MARGIN.

Carefully look over the pages on the imposing-stone, to see that none have been laid down in a wrong position; and having seen that all are in their proper places, place the chases round them. Procure a damped sheet of the paper that the formes will be worked on, and fold it to the required size—into four for 4to,

into eight for 8vo, &c.; then the furniture must be placed round the pages in such quantities that the pages will fall, when printed, a little nearer the top than the bottom, and nearer the inner than



the outer edge of each division of the paper. The following is the method of measuring to find the proper furniture required for a half-sheet of twelves ; and in other impositions the same method

Folds good. Having the paper folded into 12mo, measure from the end of the line of page 7 (see fig. B), allowing page 6 to come about a pica em within the outer edge of the paper, and then measure the distance between the pages; should it require seven ems between the two pages, the same will be required in the gutters* all through the half-sheet. Then open the paper and measure from the beginning of the lines in page 7, to the beginning of the lines of page 5, putting equal quantities of furniture on each side the cross-bar and sufficient to make page 5 come to the full outer edge of the paper. (See CC.) The heads are measured in exactly the same manner. (See figs. A and DD.)

a plentiful supply of metal furniture be at hand, the work of making-up furniture is comparatively easy, and may be accomplished with little loss of time; but where wood-furniture must be cut for the sheet or half-sheet, care, skill, and judgment are required. If obliged to use part wood-furniture use it in gutters and backs. The furniture for the gutters ought to be cut a trifle longer than the pages, and that for the heads short enough to prevent their binding when the forme is locked up. The side-sticks also should be a little longer than the pages and the foot-sticks just short enough to prevent binding.

LOCKING-UP.

The forme having been properly "dressed" with furniture, put quoins slackly both at the side and footsticks; and carefully untie the pages. Now commence to quoin the forme properly all round, and having done so, push the quoins up tightly with the fingers, then wipe the planer and plane the forme lightly, but well, turning the planer from side to side and planing the pages several times. Next tap the thick ends of both side and footsticks, to cause the pages to go up well to their places, then drive the quoins gently up all round; next drive the quoins with a little more force, using the same force all round; and lastly, with

* I use the word "gutters" here, because in book-houses this portion of the furniture is called the gutters, although in reality it is the furniture of the backs. What are called the backs in book-houses is between the pages on each side of the long cross.

sufficient force to make the forme sufficiently tight to lift off the stone ; then plane the forme again.

Locking up a forme properly is a much more difficult operation than is generally imagined ; indeed, so much care is required that it is seldom we find a compositor careful enough or sufficiently skilful to do so properly. If locked up with greater force at one side than the other, most probably the cross-bar will bend, and the forme be crooked ; if locked up too slack, there is a fear of its falling through or of type being " drawn " by the rollers ; and if locked up too tight the pages will spring. In fact, if not locked-up with an even pressure all round, the pages are liable to " hang," the only proper remedy for which is to unlock the forme and do the work over again.

Before lifting the forme off the stone, raise it a little and observe carefully if any letters, &c., are loose and likely to fall out. If the forme " lifts," take it from the imposing-stone to the proof-press.

LAYING UP AND LOCKING UP FORMES FOR CORRECTION.

In different houses different systems of laying up and locking up formes for correction are pursued. In some establishments and companionships the laying-up goes round to each by turn, and the one who has laid up locks up also. In other houses the first in a sheet, having corrections, lays up the forme and the last having corrections locks up, providing either has more than half-a-page at the beginning or end : but if a compositor is both first and last in a sheet he either lays or locks up—he does not do both. In other places, where the line book is passed, the compositor whose turn it is, according to the imposition scale, to impose, takes the entire charge of such sheet for a stated time—say a fortnight—and he both lays up for corrections and locks up, besides having had to impose the sheet ; and he must see that it is safe from damage during the time he has charge of it. This system is good, as the compositor is more careful that all goes right with his sheet than he would were it not left under his care.

GENERAL REMARKS.

The compositor must take particular care of his copy, and be able to produce it instantly when it is wanted.

All superfluous sorts, leads, quadrats, &c., that may have turned out in distributing any jobs or sheets, if they will not be required for the work in hand, must be given to the storekeeper.

When any work is finished the compositors must clear all head-lines and other materials, and if the type be not required for the next work, if it be leaded, must be unleaded, and tied in convenient sized pages, and given to the storekeeper.

In making-up sticks great care should be exercised that they may be exactly of the same measure as the sticks of other compositors on the same work. It is best to make sticks up to a half of pica m's set thus— E E E , just sufficiently tight to allow the line to move easily.

No compositor ought to take sorts from any case without permission, neither ought he to withhold permission to any other to take sorts that he may have in abundance.

When receiving cases from the overseer, the compositor ought to see that they are in proper condition, or point out anything that may be wrong with them; and he must return his cases, when done with, clean and free from pie.

Compositors ought to abstain from holding unnecessary conversation with each other, and from doing anything which may cause annoyance to their companions.

COMPANIONSHIPS.

I am not certain whether I ought to include the different systems pursued in different book-offices in London, under the head of Companionships, because, properly speaking, there are no Companionships in many of the smaller book-offices; but I will here give for the guidance of those who may go into a book-printing establishment in London for the first time an idea of the modes of working there, hoping by doing so to preserve them from much unnecessary embarrassment. As it is many years since I held a frame in any London house, other systems

have sprung up of which I am unable to speak, but which will, I doubt not, be only modifications of the systems in operation formerly.

THE LINE BOOK.

The system adopted in some of the smaller houses is for each compositor to make up and impose his own pages, the making-up being passed from one compositor to the companion who follows him, accompanied by the line book, which I will endeavour to explain as briefly as possible. We will suppose that Messrs. Pearson, Pain, Tooley, and Robertson are formed into a companionship to get out a certain work. Having filled their cases with the type required, and received copy from the overseer, they start composing. Pearson having first "take," so soon as he has finished it commences the making-up, the length of page being usually given by the overseer. For illustration, I will say the pages are thirty-three lines long. Pearson makes up four pages, and passes twelve lines to Pain, who has the second "take." With the making-up, the compositor who has the first pages in the work must make out the line book, thus:—

LINE BOOK—THE RHINE.

Pearson to Pain, fol. 5—5th in Sig. B.

	To the good.		To the bad.
Pearson	12	|	Pain
			12

Pain makes up five pages, and has fourteen lines over, but being twelve lines to the bad, he is not allowed to borrow lines to make up the next page, but must pass the fourteen lines to Tooley, who follows him in copy. By passing fourteen lines to Tooley, and deducting the twelve lines he is to the bad from them he finds himself two lines "to the good." He accordingly fills up the line book thus, and passes the making-up:—

Pain to Tooley, fol. 10—10th in Sig. B.

Pearson	12	|	Tooley	14
Pain	2	|		
	<hr/>			<hr/>
	14			14

Tooley makes-up six pages, and has three lines over, which he passes to Robertson; being fourteen lines "to the bad" he

deducts the three lines he has passed, which leaves him eleven lines "to the bad." The line book is then passed with the making-up, and stands thus :—

Tooley to Robertson, fol. 16—16th in B.

Pearson	12	Tooley	11
Pain	2	Robertson	3
	<hr/>		<hr/>
	14		14

Robertson makes up one page to complete the sheet, and at once informs his companions to "lay down pages." The pages are laid down each in its proper place, the quoin drawer overseer places chases and furniture round them. Tooley, who has most pages in the sheet, must impose, and likewise make out and fill up the imposition scale, in this form :—

IMPOSITION SCALE.

Sigs.	Pearson	Pain	Tooley	Robertson		Imposed by
B	4	5	6	1		Tooley
C						
D						
E						

When a compositor passes lines to a companion, he must also pass headline and white with them.

Where the companionship is small and the compositors well acquainted with their business, this system is good; but it is not

suitable for large companionships, too much time being usually lost by frequent mistakes in entering or passing lines, &c.

The compositor in making out his "bill," when working in a companionship of this description, writes the number of pages he has made up and imposed; and the pages he has made up but not imposed he writes on account: thus—

The Rhine, Sig. B 4 pp.	40	4	0
Andrew Trudger, Sig. B 6 pp. Sig. C 10 pp.	1	11	0
On account The Rhine 6 pp.	0	6	0
	<hr/>		
	£2	1	0

J. PEARSON.

Another system adopted, chiefly on Monthly Magazines, is to write on account, deducting the account line each week, and also after the General Bill is made out; and the compositor makes out his bill thus:—

Jan. 16, 1874.			
16 pp. The Observer	£1	4	0
On account The Bar	4	0	0
	<hr/>		
	5	4	0
Deduct on account Jan. 9	3	10	0
	<hr/>		
	£1	14	0

J. GOULD.

Jan. 23, 1874.			
12 pp. The Observer	£0	18	0
1 p. 4to demy, brevier—Circular	0	5	6
General Bill—The Bar	5	0	7
	<hr/>		
	6	4	1
Deduct on account Jan. 16	4	0	0
	<hr/>		
	£2	4	1

J. GOULD.

When the Magazine or other work is finished each compositor looks carefully over the sheets and marks the whole of the matter he has composed; and, when all have "marked," the sheets are given to one of the compositors in the companionship, who

undertakes to make out the General Bill. He first of all finds out how many pages of each different sort of type the magazine contains, and puts down the number and value of each in separate lines. He then with a page-cord measures each compositor's matter, first the small pica, then the long primer, and lastly the brevier, putting down the amount of each, and giving the total amount in the

GENERAL BILL—THE BAR FOR JANUARY. THIRTEEN SHEETS.

38 pp. brev. at 3s.	£5 14 0	Pearson	£5 19 0
103 pp. sm. pica, 1s. 8d.	8 11 8	Gould	5 0 7
67 pp. l. p. 2s. 1d.	6 19 7	Gardiner	5 2 4
		Searle	5 3 4
	<hr/>		<hr/>
	£21 5 3		£21 5 3

THE CLICKING SYSTEM.*

When Companionships are blessed with honest, upright, and hard-working clickers, who do not endeavour to favour one companion and be a stumbling-block in the way of another; who treat every one alike, and act for the good of the "ship," there is no system that I am acquainted with better for the compositor and his employer. Under this system, the compositor, on his lines, is enabled to earn greater wages, he being able to remain in his frame until wanted for the purposes of correcting, not losing time in the various ways unavoidable in connection with other systems, and having nothing to do but distribute and set and the employer gains by a greater amount of work being turned out, and by the pages being made up to a proper length, thus saving much time in making ready at machine or press.

There are several methods of paying clickers, however, some being, I venture to say, grossly unjust; one of which is to pay the clicker the same number of hours as the compositor who makes the highest in the Companionship. This method affords

* I once assisted at a "rush" where the line book and clicking were combined on the same work. The work was given to the two companionships by a chapter each, and as each chapter ended a page the working of the two systems could easily be kept separate. I understood, however, from the clicker (Mr. Cox, afterwards Secretary of the London Society of Compositors,) that such a "mix" was very seldom resorted to.

scope to an unscrupulous clicker to so manage the copy that the quickest workman—and there is sometimes an immense difference in the quickness of comps. belonging to the same Companionship—shall have the most straightforward and fattest copy, and in many other ways to assist the swiftest worker, so that he (the clicker) may have the greater number of hours to write, the consequence being that every member of the companionship “shares the loss.” There were other unfair methods which I hope are now discontinued, and of which I need not speak. Clickers, however, are often spoken of in disrespectful terms, simply because some grumbler, who does not understand the working of the system, endeavours to make out that he has too many lines to set for each hour’s work, or that the clicker is not attentive, or robs his companions by charging time he is not entitled to. I believe, in many instances, if men did but cast up their hours’ work and note the doings of their clicker, they would find themselves at fault, although they might not confess it. I have not worked under many clickers; but those I have been placed under, were, I considered, most upright, energetic, and honest. Certainly, I recollect a clicker “making the bill pay” by writing, for several weeks, a few sheets more than were composed, leaving his companions at the end of that time considerably in debt. Of course, such doings could not be continued long; and no clicker with the slightest pretension to honesty would attempt it.

When a new companionship is formed I think it would be best to allow the members to choose their own clicker; for it is certain they would fix upon an honest, industrious, and expert workman.

I will try to give a short explanation of the system, and as briefly and clearly as I can. The clicker having had the copy of a work put into his hands, requests his companions to get in letter. While they are doing so, he prepares himself to set the notes, chapter headings, poetry, head-lines, &c., required for the first sheet. As soon as the members of the “ship” have sufficient letter in, they apply to the clicker for copy, and as soon as the clicker finds that a few “takings” are finished, by his companions applying for a second “take,” he commences to make up. He goes to the first in the making-up, takes his galleys of matter, the lines of which he either counts or measures with a type-gauge, taking note of the number of lines composed by each, so that he

may be able to check their bills when sent in. When sufficient for a sheet has been made up he lays down the pages on the stone, and acquaints the quoin-drawer overseer, who at once puts furniture and chases round them. The clicker then takes off the cords, locks up the formes, and takes them to the proof puller. When the proof comes out it is given to the clicker; and he in turn hands it to the first in the sheet, who lays up, unlocks, and corrects his portion. The proof then goes round regularly as before explained; and, if it be the system of the house, the last in the sheet locks up the formes, and takes them to the proof-puller to be pulled for revise.

At the end of the week each companion gives his bill to the clicker, thus—F. BRIERLEY, 54 hours. And the clicker makes out his bill in this manner:—

COMPANIONSHIP.					BILL.			
	hours	£	s.	d.		£	s.	d.
Brierley . . .	54	2	2	9				
Lewis . . .	41	1	12	5½				
Smale . . .	50	1	19	7	To 20 sheets "The			
Mathews . . .	44	1	14	10	Trudger," from			
Coulson . . .	39	1	10	10½	sig. B to X, at			
Burroughs . .	44	1	14	10	16s. per sheet .	16	0	0
James . . .	42	1	13	3	Author's Correc-			
Turner . . .	50	1	19	7	tions and Press			
Suter . . .	45	1	15	7½	Proofs . . .	2	5	0
Blackie . . .	40	1	11	8	On account on			
Pain, Clicker	54	2	2	9	galleys . . .	1	13	2½
	503	19	18	2½		19	18	2½

At 9½d. per hour.

To find the number of lines per hour you must find the number of ens there are in a line and then divide 1000 by that number which we will take at 50 ens, thus—

$$\begin{array}{r} \text{ens in line } 50 \overline{)1000} \\ \underline{20} \end{array}$$

which would make the number of lines to the hour 20; but should the work in hand be a solid reprint, it is usual to put on a line and sometimes two, which would make the hour's work, of course, 21 or 22 lines. If on the other hand the work is leaded

and manuscript, a line or two is deducted to compensate the compositor for the extra trouble of leading his matter.

By reducing the amount of the general bill to pence, and dividing by the number of hours written, we arrive at the price per hour, viz., $9\frac{1}{2}$ d. It will be seen, that I have put down the clicker for the full amount of hours the line is supposed to have been on. Had the clicker lost time, the time would have been deducted.

HOW TO CAST UP A WORK.

Set a line of m's thus— m , in a stick to the measure of the work, and double them. Should 20 ems and a thick space make the line it will be counted 41, the thick space counting as one en, but anything under the thick space is not counted. Then count the number of lines in a page, if the matter be solid, including heads and whites; but if the page be leaded set a line of quadrats or m's to the full length of the page, and count them. For illustration, I will take the length of the page at 45 ems, had it been 45 ems and an en it would have been called 46 ems long—the en counting an em in the length—but anything less than an en does not count.

CAST UP

45 ems long.

40 ens wide.

1800 ens in a page.

16 pages in a sheet.

10800

1800

28800 = 29 thousand ens in sheet.

$7\frac{1}{2}$ d. per 1000.

208

$14\frac{1}{2}$

12) 217 $\frac{1}{2}$ d. per sheet.

18s. $1\frac{1}{2}$ d.

1 0 per sheet extra if there are notes.

1 0 " " " if there is mixture.

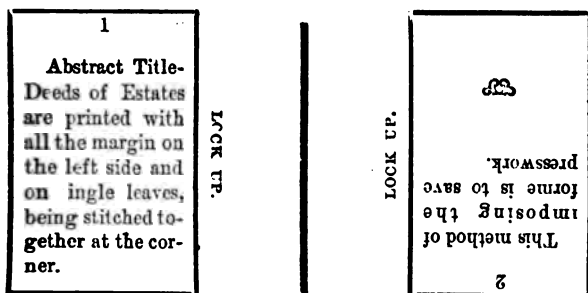
£1 0 $1\frac{1}{2}$

It will be seen that 28800 is put down at 29 thousands; but had it have been 28499 ens it would have counted only 28 thousand, 500 or more carrying the 1000, under 500 not being charged. "Mixture" is the insertion in the text of a type between the sizes of the body and the notes.

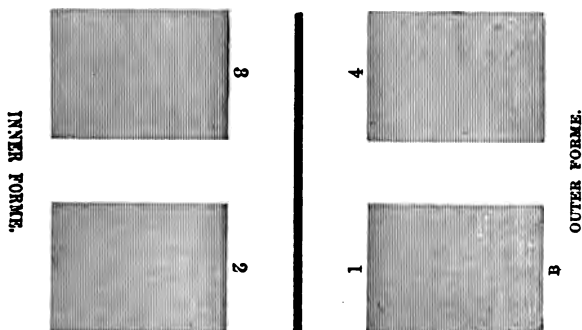
NAMES OF VARIOUS SIZES OF BOOKS.

Folio denotes a sheet of paper folded into two leaves, making four pages; *quarto*, 4to, is a sheet divided into four leaves, or eight pages; *octavo*, 8vo, a sheet into eight leaves, or sixteen pages; *duodecimo*, 12mo, a sheet into twelve leaves, or twenty-four pages. So, also, sixteens, 16mo; eighteens, 18mo; twenty-fours, 24mo; thirty-twos, 32mo; forty-eights, 48mo; sixty-fours, 64mo, are the several designations of sheets when folded into sixteen, eighteen, twenty-four, thirty-two, forty-eight, and sixty-four leaves, each making twice the number of pages.

DIAGRAMS OF IMPOSITIONS.



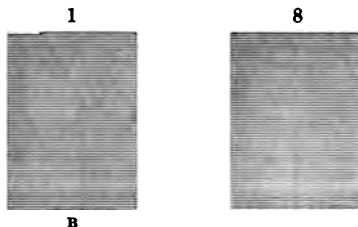
ABSTRACT TITLE-DEEDS OF ESTATES.



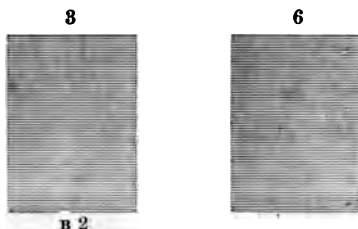
A SINGLE SHEET OF FOLIO.

D

OUTER FORME OF THE OUTER SHEET.



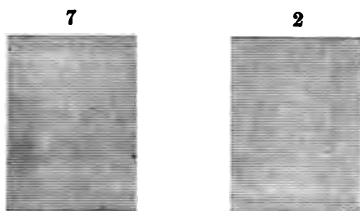
OUTER FORME OF THE INNER SHEET.

TWO SHEETS OF FOLIO, QUIRED, OR LYING
ONE IN ANOTHER.

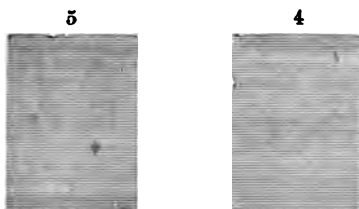
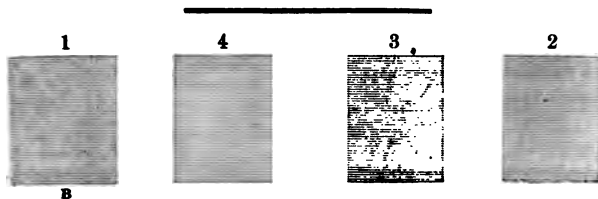
Imposing in quires may be carried to any extent by observing the following rule:—Suppose the work to consist of 32 pages or 8 sheets, then, any two pages whose united numbers make 33, are to be imposed together; as, 1, 32—19, 14—12, 21, &c.

There must be less furniture in the backs of the inner sheet than the outer, to allow for stitching.

INNER FORME OF THE OUTER SHEET.



INNER FORME OF THE INNER SHEET.

TWO SHEETS OF FOLIO, QUIRED, OR LYING
ONE IN ANOTHER.

B

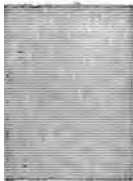
A HALF SHEET OF QUARTO, IMPOSED THE
LONG WAY.

D 2

OUTER FORME.



7
1



9
8



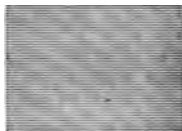
B

A SHEET OF COMMON QUARTER.

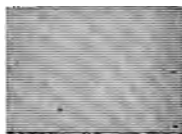
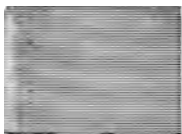
OUTER FORME.



7
1



9
8

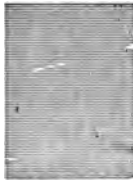


B

A SHEET OF QUARTO, THE BROAD WAY, COMMONLY
USED IN WORKS OF MUSIC.

INNER FORME.

7 8



9

8

7

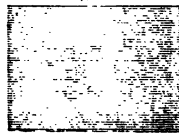
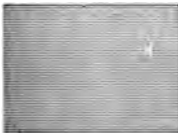
2



A SHEET OF COMMON QUARTO.

INNER FORME.

7 8



9

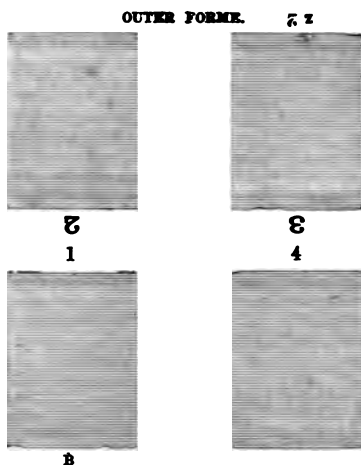
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7

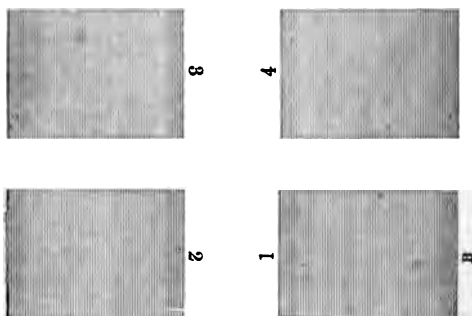
2



**A SHEET OF QUARTO, THE BROAD WAY, COMMONLY
USED IN WORKS OF MUSIC.**

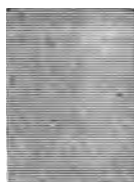


TWO HALF-SHEETS OF QUARTO, WORKED TOGETHER.



HALF A SHEET OF COMMON QUARTO.

INNER FORME. Z

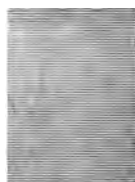


7

1

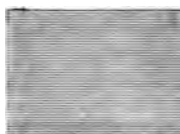
3

2



B 2

TWO HALF-SHEETS OF QUARTO, WORKED TOGETHER.

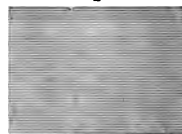
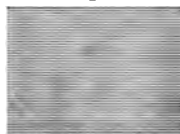


7

8

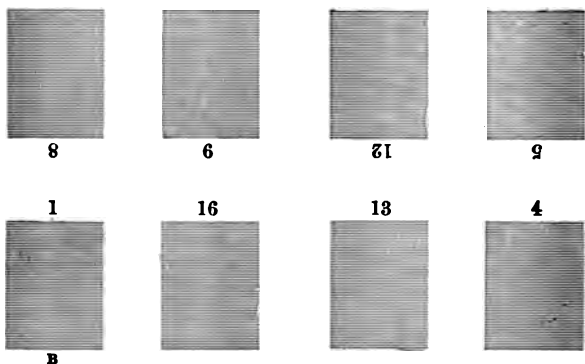
1

4

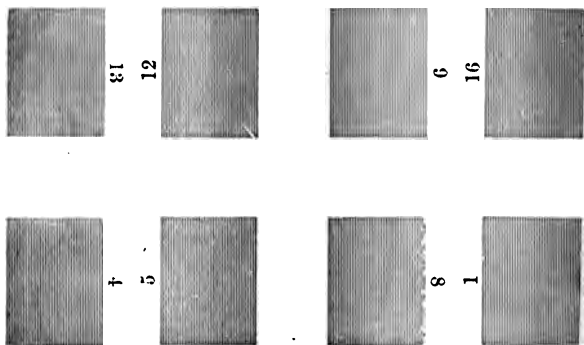


B

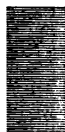
HALF A SHEET OF QUARTO, THE BROAD WAY.



OUTER FORME OF A SHEET OF COMMON OCTAVO.



OUTER FORME OF A SHEET OF OCTAVO, THE BROAD WAY.



9



11

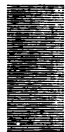


01



L

3



14



15



2



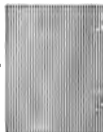
B 2

INNER FORME OF A SHEET OF COMMON OCTAVO.



21

10



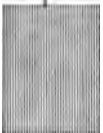
11

14



2

7



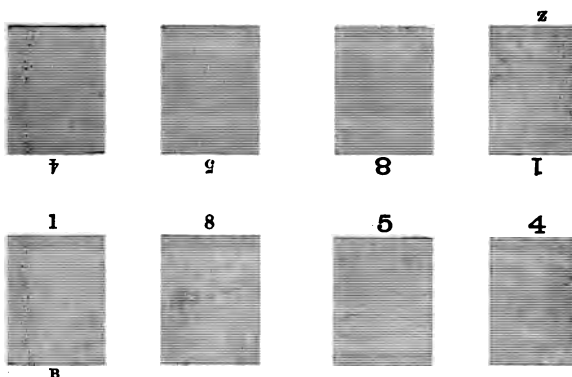
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3

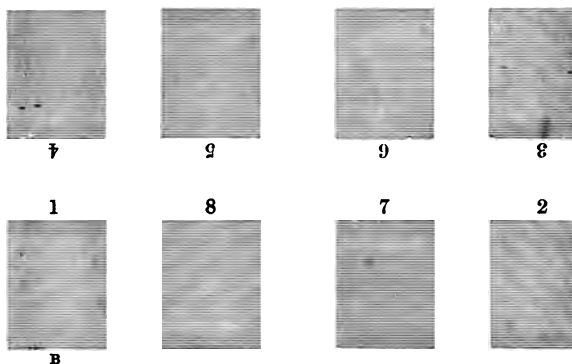


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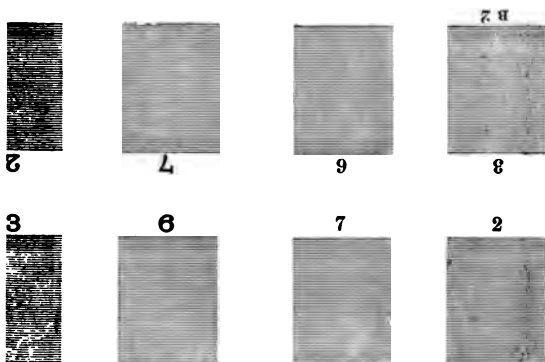
INNER FORME OF A SHEET OF OCTAVO, THE
BROAD WAY.



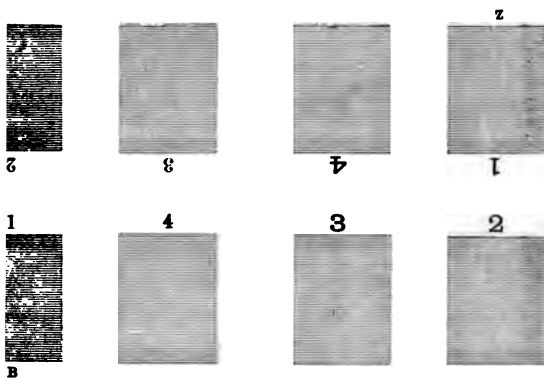
OUTER FORME OF TWO HALF-SHEETS OF COMMON OCTAVO, WORKED TOGETHER.



HALF A SHEET OF COMMON OCTAVO.



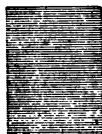
INNER FORME OF TWO HALF-SHEETS OF COMMON OCTAVO, WORKED TOGETHER.



TWO QUARTERS OF A SHEET OF OCTAVO, WORKED TOGETHER.



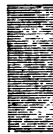
8



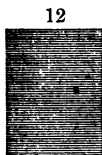
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8



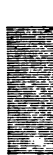
1



12

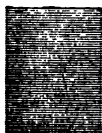


9



B

OUTER FORME OF A SHEET OF OCTAVO, 12 OF THE W
AND 4 OF OTHER MATTER.



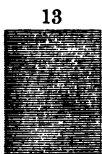
21



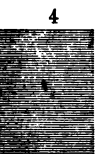
9



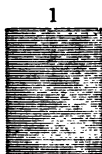
8



13



4



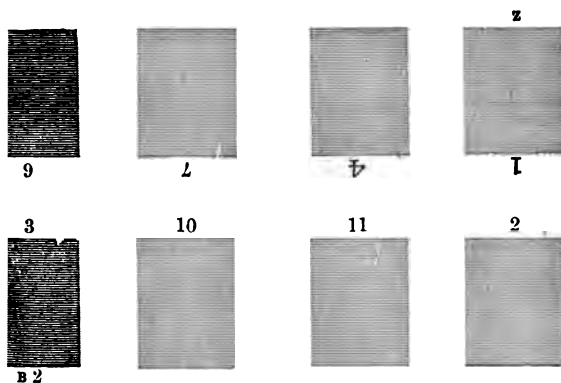
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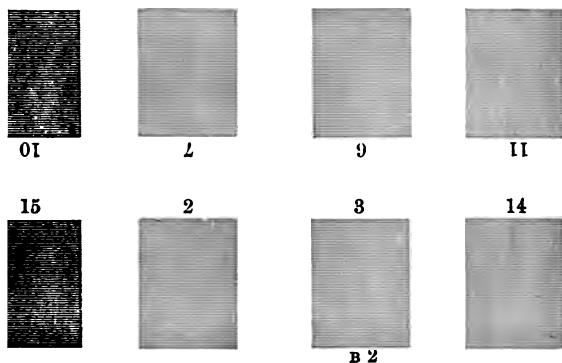
1

B

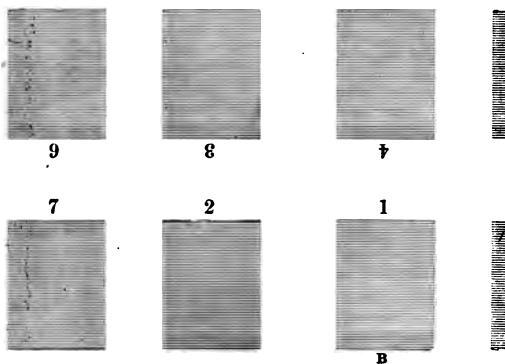
OUTER FORME OF A SHEET OF OCTAVO, IMPOS
FROM THE CENTRE.



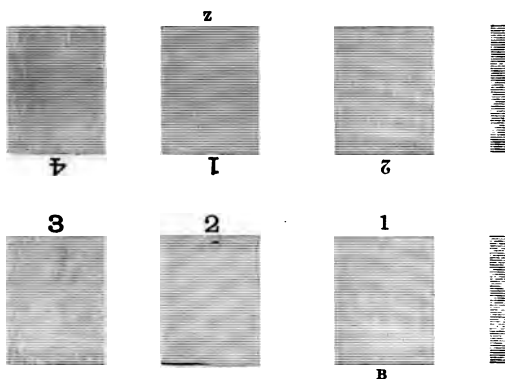
INNER FORME OF A SHEET OF OCTAVO, 12 OF THE WORK,
AND 4 OF OTHER MATTER.



INNER FORME OF A SHEET OF OCTAVO, IMPOSED
FROM THE CENTRE.



A HALF-SHEET OF OCTAVO, IMPOSED FROM
THE CENTRE.



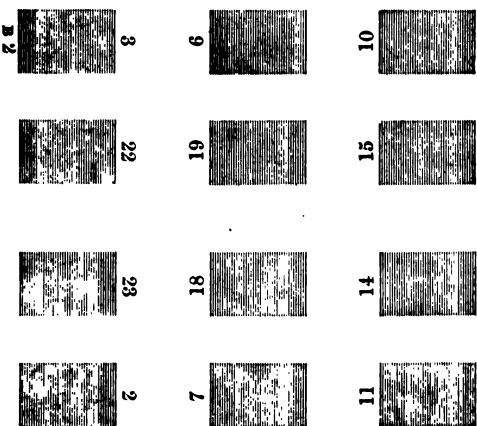
TWO QUARTERS OF A SHEET OF OCTAVO, IM
FROM THE CENTRE.

IMPOSITION.

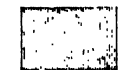
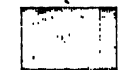
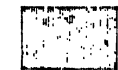
OUTER FORME OF A SHEET OF TWELVES.



INNER FORME OF A SHEET OF TWELVES.



INNER FORME.



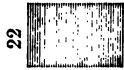
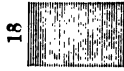
OUTER FORME.



IMPOSITION.

OUTER FORME.

INNER FORME.



1

16

13

4

3

14

15

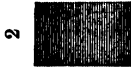
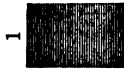
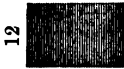
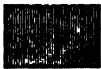
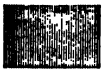
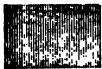
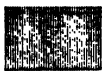
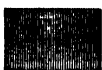
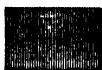
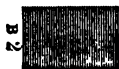
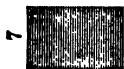
2

B

B 2

B

A SHEET OF TWELVES, WITH TWO SIGNATURES.



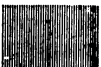







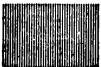
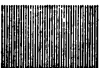














B

HALF-SHEET OF TWELVES WITHOUT
ATTENDING

A COMMON HALF-SHEET

IMPOSITION.

	9		7		8	 B 2	2		9		7		8	 B 2	5
	10		8		4		6		12	 B	1		2	 B 2	11
	11		2	 B	1		12		9		4		8		10

DIFFERENT METHODS OF IMPOSING HALF-SHEETS OF TWELVES FROM THE CENTRE.

INNER FORME.



15



10



11



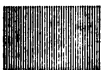
14



19



6



7



18



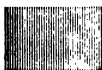
22



3



2



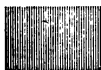
23

B 2

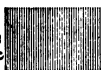
OUTER FORME.



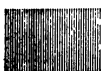
13



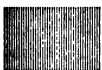
12



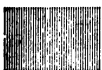
9



16



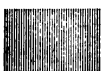
17



8



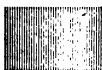
5



20



24



1



4



21

B

B 3

IMPOSITION.

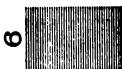
OUTER FORME.



9



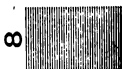
7



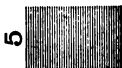
9



4



8



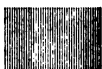
5



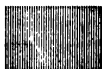
8



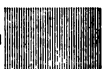
5



4



6



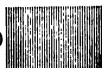
4



6



10



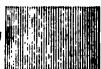
3



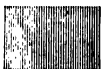
10



3



1



12



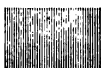
1



12



11



2



11



2

INNER FORME.

30

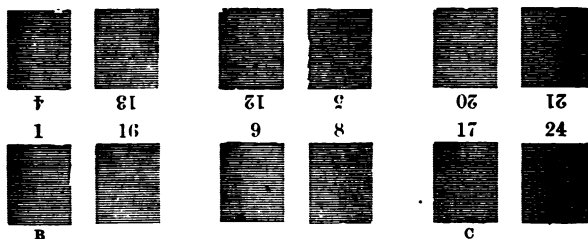
30

20

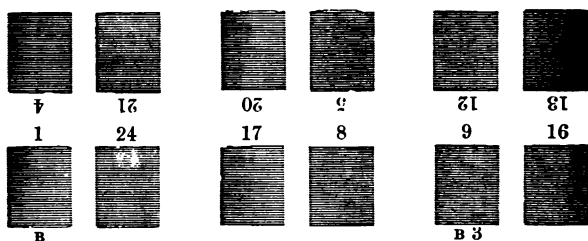
20

01

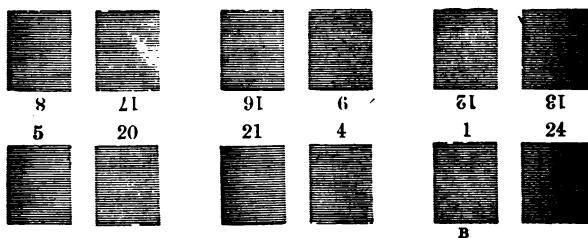
01



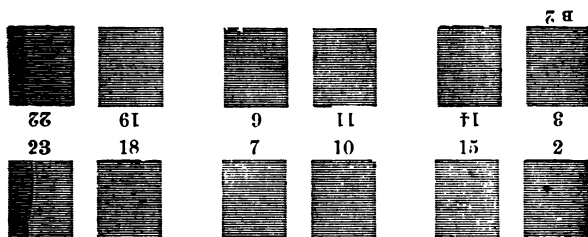
OUTER FORME OF A SHEET OF LONG TWELVES,
Without Inset.



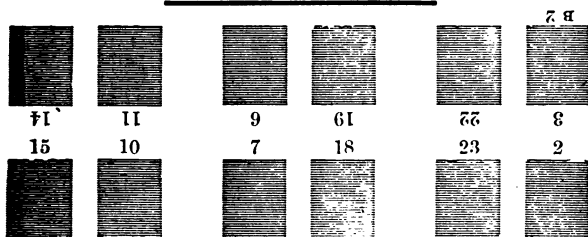
OUTER FORME OF A SHEET OF LONG TWELVES,
With Inset.



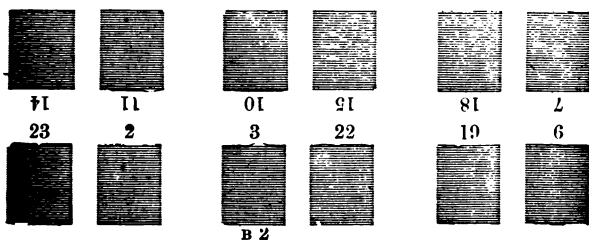
OUTER FORME OF A SHEET OF LONG TWELVES,
To be folded without cutting.



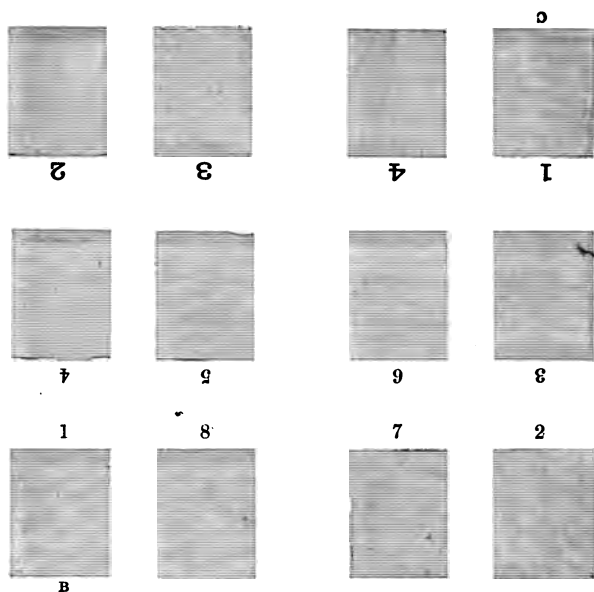
INNER FORME OF A SHEET OF LONG TWELVES,
Without Inset.



INNER FORME OF A SHEET OF LONG TWELVES,
With Inset.



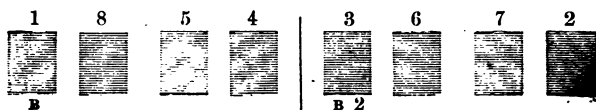
INNER FORME OF A SHEET OF LONG TWELVES,
To be folded without cutting.



HALF-SHEET OF TWELVES, 8 OF THE WORK,
AND 4 OF OTHER MATTER.

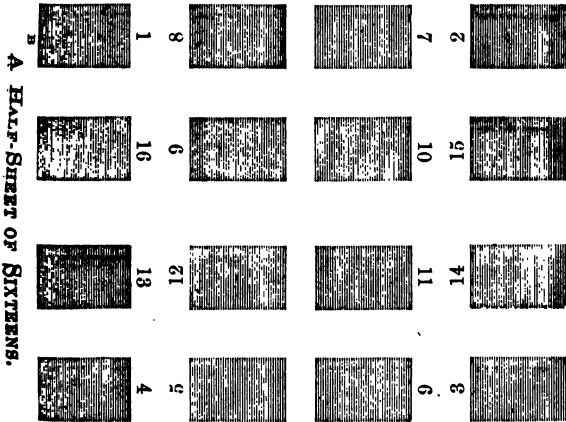
OUTER FORME.

INNER FORME.

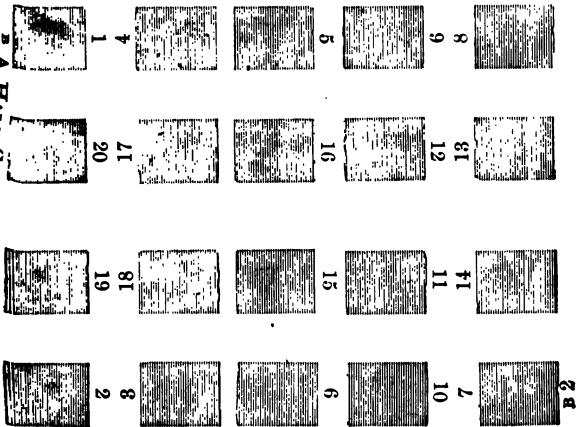


EIGHT PAGES OF A SHEET OF TWELVES.

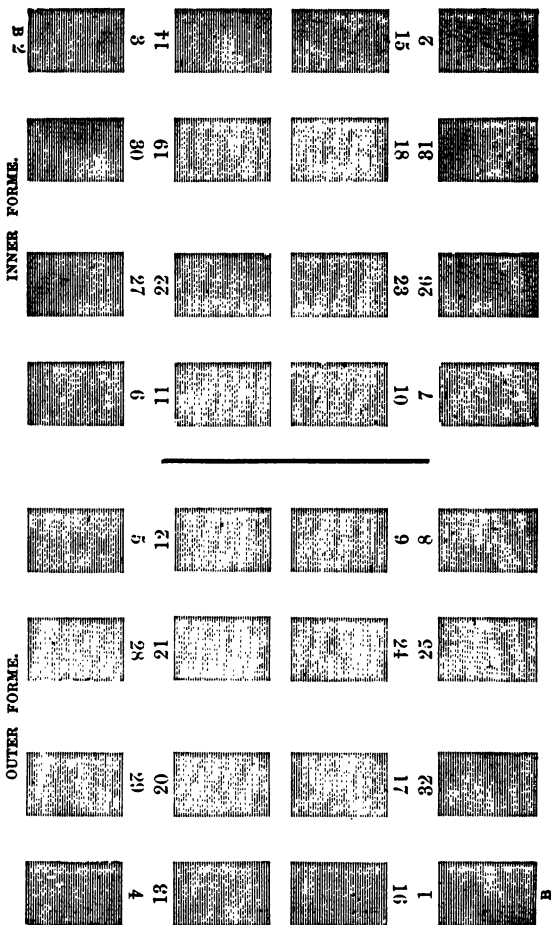
To be imposed as a slip.






































A HALF-SHEET OF SIXTEENS.





















A HALF-SHEET OF TWENTIES.



A SHEET OF SIXTEENS.

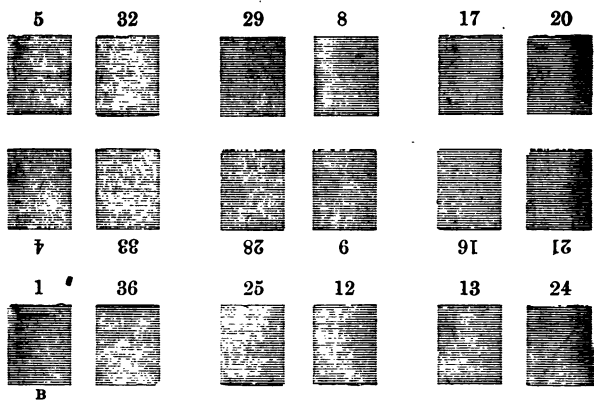
OUTER FORME.			INNER FORME.			B 8
						
28	22	19	20	21	24	17
						
28	28	12	9	30	27	14
						
						
28	28	6	10	18	27	15
40	33	8	7	34	30	2
						

A SHEET OF TWENTIES.

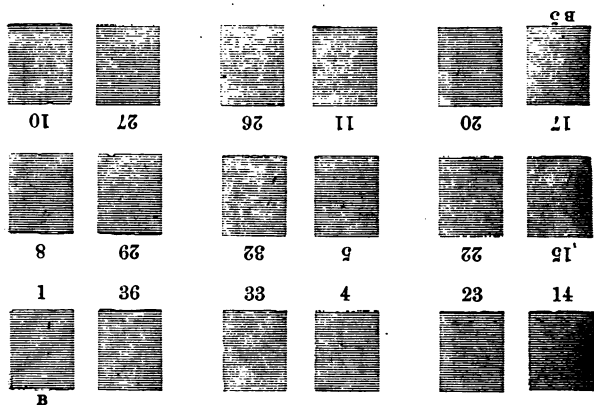
B 7		B 4			
					
1	5	10	9	6	13
					
	11	11	7	9	8
	18	11	8	17	2
					

A HALF-SHEET OF EIGHTEENS.
















When the white paper is worked off, transpose pages 11 and 8 to 7 and 12 pages 7 and 12 to 11 and 8: this done, the sheet will fold up right.


















OUTER FORME OF A SHEET OF EIGHTEENS,
TO BE FOLDED WITHOUT CUTTING.



OUTER FORME OF A SHEET OF EIGHTEENS.

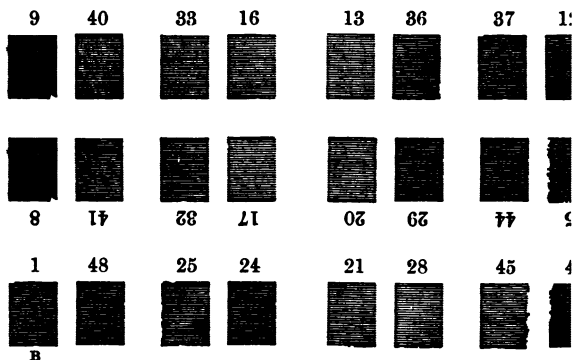
18	7	30	31	6
				
				
91	10	27	34	3
14	11	26	35	2
				

INNER FORME OF A SHEET OF EIGHTEENS,
TO BE FOLDED WITHOUT CUTTING.

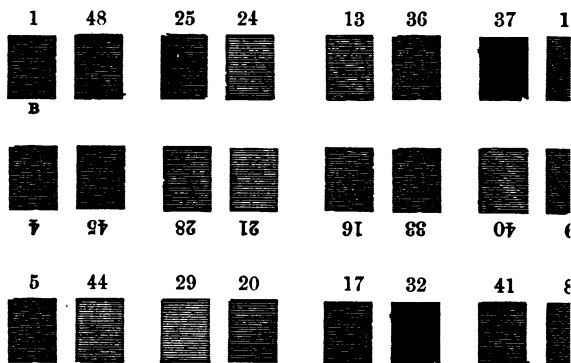
				
61	21	25	28	6
				
12	9	18	08	7
24	3	34	35	2
				

B 2

INNER FORME OF A SHEET OF EIGHTEENS.



OUTER FORME OF A SHEET OF TWENTY-FOURS.

OUTER FORME OF A SHEET OF TWENTY-FOURS,
TO BE FOLDED WITHOUT CUTTING.

11	88	35	14	15	84	39	10
9	87	08	61	81	18	27	7
3	46	27	22	23	26	47	2





























B 2

INNER FORME OF A SHEET OF TWENTY-FOURS.

11	38	35	14	23	26	47	2
10	39	34	15	22	27	46	3
7	42	31	18	19	30	43	6





























B 2

INNER FORME OF A SHEET OF TWENTY-FOURS,
TO BE FOLDED WITHOUT CUTTING.

						
7	19	98	67	82	78	09
13	52	45	20	21	44	53
						
						
91	67	87	17	72	41	92
1	64	33	32	25	40	57
						

B

OUTER FORME OF A SHEET OF THIRTY-TWOS

						
72	22	82	12	92	72	09
17	32	29	20	49	64	61
						
C				E		
						
8	6	12	5	07	17	77
1	16	13	4	33	48	45
						
B				D		

OUTER FORME OF A SHEET OF THIRTY-TWOS,
WITH FOUR SIGNATURES.

IMPOSITION.

78

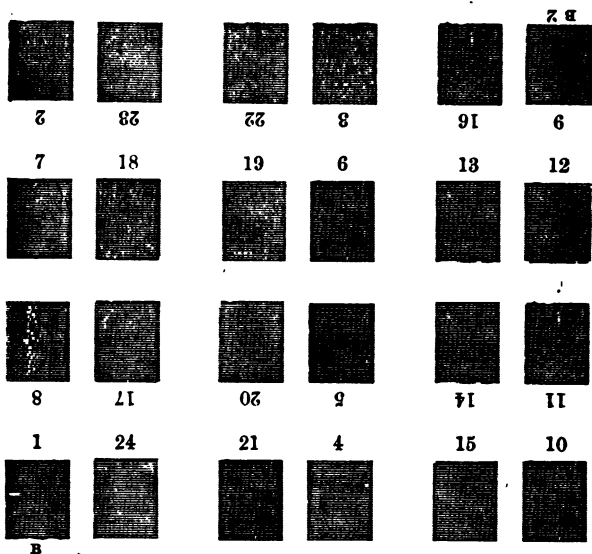
							28
9	69	88	17	08	98	79	8
11	54	43	22	19	46	51	14
01	99	77	87	81	17	09	91
7	58	39	26	31	34	63	2

INNER FORME OF A SHEET OF THIRTY-TWOS.

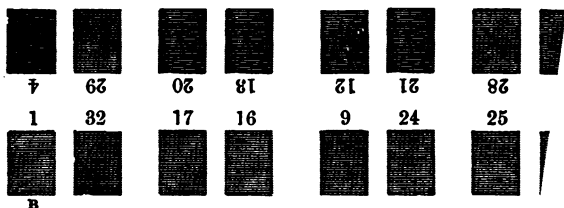
79	69	89	99	77	17	97	87
51	62	63	50	19	30	31	18
88	87	77	68	9	11	01	1
35	46	47	34	3	14	15	2

B 2

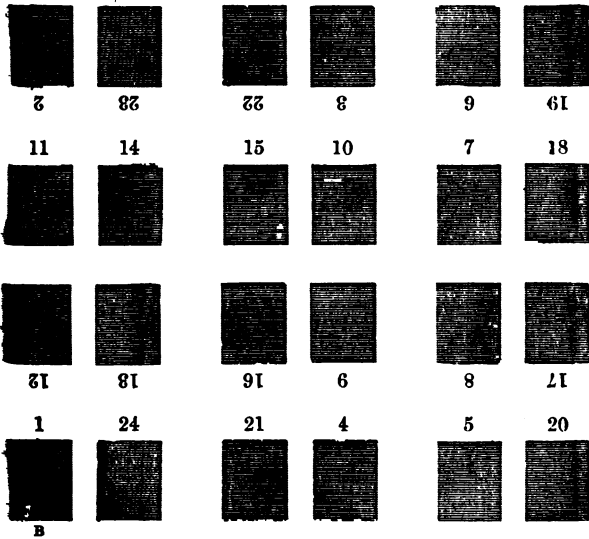
INNER FORME OF A SHEET OF THIRTY-TWOS,
WITH FOUR SIGNATURES.



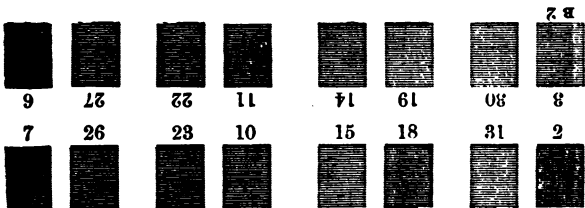
A HALF-SHEET OF TWENTY-FOURS, THE
SIXTEEN WAY.



OUTER FORME OF A SHEET OF LONG SIXTEENS
To be folded without cutting.



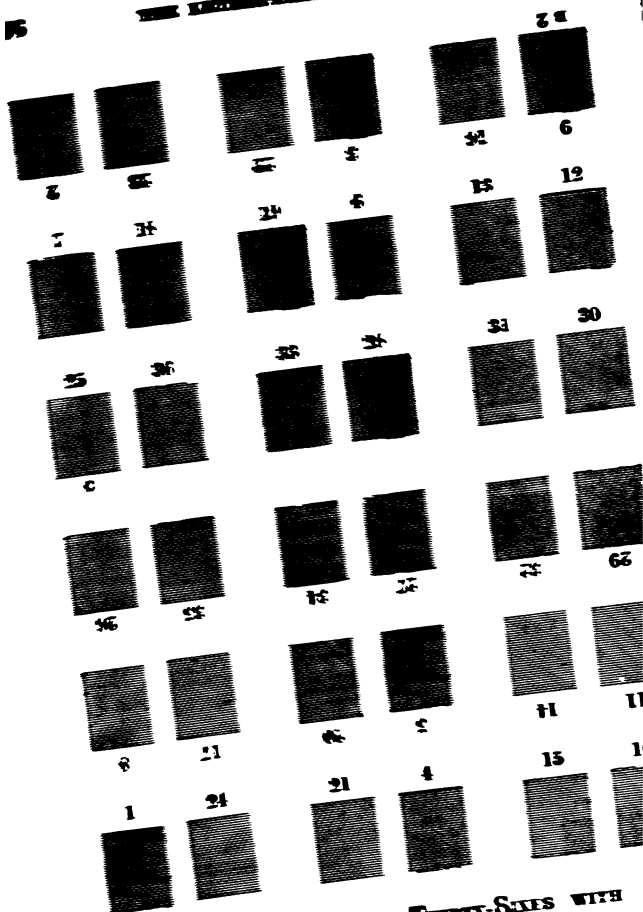
A HALF-SHEET OF TWENTY-FOURS, THE SIXTEEN
WAY, TO BE FOLDED WITHOUT CUTTING.



INNER FORME OF A SHEET OF LONG SIXTEENS,
To be folded without cutting.

5

















































THE FORTY-FIVE



A HALF-SHEET OF THIRTY-SIXES WITH TWO SIGNATURES.

IMPOSITION.

77

								d
								
34	47	46	35	36	45	48	38	
39	42	43	38	37	44	41	40	
								
								o
								
18	18	08	61	02	62	28	17	
23	26	27	23	21	28	25	24	
								
								
8	6	12	9	9	11	01	7	
1	16	13	4	3	14	15	2	
								
B								

























































A HALF-SHEET OF FORTY-EIGHTS, WITH
THREE SIGNATURES.

A HALF-SHEET OF SEVENTY-TWOS, WITH THREE SIGS.

114	127	921	911	001	601	211
119	122	123	118	101	108	105
99	62	82	29	78	86	96
71	74	75	70	85	92	89
09	89	62	51	98	47	87
55	58	59	54	37	44	41
8	6	12	9	22	27	92
1	16	13	4	19	30	31

B

OUTER FORME OF A SHEET OF SIXTY-FOURS, W
EIGHT SIGNATURES.

						I	
							
1	011	66	911	921	821	811	
6	107	102	117	124	121	120	
							
						A	
							
3	76	88	89	77	80	79	
U	91	86	69	76	73	72	
							
						II	
							
4	46	85	52	61	64	49	
U	43	88	53	60	57	56	
							
						III	
							
25	28	21	9	11	10	7	
32	29	20	3	14	15	2	
							
						B 2	

FORME OF A SHEET OF SIXTY-FOURS, WITH
EIGHT SIGNATURES.

The impositions given in the preceding pages embrace such as are sufficient for every purpose. Several which have found a place in other Hand-books are omitted here as unnecessary, and new ones are given instead, in the hope that they will be found more useful in general book-work. A few half-sheets and quarter sheets, being simply repetitions of the foregoing impositions, are also omitted. Sheets and half-sheets imposed from the centre, however, will be found, such impositions being in many instances very convenient where short or blank pages occur in a sheet; for, being imposed from the centre, the light or blank pages may be surrounded by the full pages, which in working at hand-press especially—is a great advantage.

Although in the large London book-houses, where the clicker system is carried on, the compositor is not called upon to lay down and impose his pages, nevertheless a knowledge of imposition ought to be possessed by every workman; for the want of such knowledge—which might at any time be required of him—may prove seriously detrimental to his interests.

In the country especially, both in jobbing and news-offices, to know how to lay down pages and impose them is indispensable. In such offices compositors are, in many instances, unable to accomplish the simplest impositions; and one who is perfect in them, even to an octavo sheet only, is a very useful man.

The introduction of large machines into book-houses, and the employment for book-printing, renders it unnecessary that a large number of the many-page impositions should be omitted, they, in such houses, being in as great request as even the ordinary sheets of 8vo. and 12mo.

All impositions—except the half-sheet of eighteens, which is different from the others—are built upon the same foundation of 8vo. and 12mo. The sheet of sixty-fours (half-sheet of one hundred and twenty-eights, if imposed in one chase) is eight sheets of 8vo.; the half-sheet ninety-sixes is six sheets of 8vo.; the half-sheet of seventy-twos is three sheets of 12mo.; the half-sheet of forty-eights is three sheets 8vo.; the sheet of eighteens is a sheet of 12mo., and a half-sheet of 12mo. imposed as an off-set either for an “inset” or to form a separate half-sheet, &c. &c.

J O B - W O R K .

AN infinite variety of different descriptions of work is embraced by the term "Job-work," in most of which the compositor is called upon to exercise his skill or taste, by displaying lines so that, according to the class of job, they shall appear bold and effective, or artistic and neat. To be a good jobbing-hand it is not absolutely necessary that the compositor should be a "whip." The qualities required of him most are a quick perception of the features to be brought prominently out in different jobs, and in so arranging that he loses no time in bringing out those features, by setting useless lines, and, as is sometimes the case with the unskilful workman, in being compelled to almost re-set a job after it is supposed to be finished—or ought to have been finished. A good jobbing-hand, well used to the office in which he is working, can fix at once on the type that he will require for any line. If he wishes for a full line he will go with confidence to the type he selects, and finds, in nine cases out of ten, the type makes the line he expected—a full one; and so on throughout the job in hand, which, when once in type, requires no alteration to bring it down to the size of the paper, or to drive it out so that it shall fill the sheet. For even the best hands to be able to proceed with their work in a satisfactory manner, however, it is necessary that they should be thoroughly acquainted with the descriptions of type contained in the office, and to know where to find it without having to waste time in searching.

GENERAL ARRANGEMENT.

To facilitate the execution of work, and to prevent unnecessary embarrassment to the workmen, every rack ought to be numbered lettered, and all the cases numbered, and numbers ought to be

placed on the sides of the racks corresponding with those cases in the racks. If the racks are lettered (say A, B, the cases belonging to rack A ought to be numbered also—3A, &c., and all cases ought to be placed in their proper Every case should be labeled with lines of the type it contains and it would be a convenient plan to paste a slip of description of type on a sheet of paper, and give the number of the case containing it, thus—

1 A REFORMATION

POSTPONEMENT OF LECTURE
BY THE AUTHOR OF

2 B In Affectionate Remembrance of ASTRONOMY

ROYAL BLUE BOOK

This sheet should be pasted on the wall at the end of the rack on the rack itself, so that the compositor would see at a glance where the type he requires is to be found. A book might be kept containing a line of each sort of type, numbered and let on the cases, which would be a handy reference for any compositor not used to the office, or to show to any customer who might choose a particular type for a job. The larger types ought to be properly arranged on shelves, with slips of wood between each line of type; and the large wood type should be set on each letter labeled on its end, or a label placed below each letter, thus—

Type on edge	AAABB			CCDD			EEEE			FFGG			I
Face of Shelf	A	B	C	D	E	F	G						

By which arrangement much space is saved; and if the labels are printed on cards, and tacked on the face of the shelves, they will remain firm. An upright ought to be placed between the types, at intervals, to keep them from falling over—say, between B and C, D and E, E and F, G and H, I and J, &c. When in this manner, the types can be set from the shelves with

as much case as a line of caps. The cases most in use should be kept up, so as to be always at hand ; and any case taken out of the rack for temporary use ought to be returned as soon as done with ; in fact, everything in an office ought to have a "proper place, and everything ought to be kept in its proper place."

Shelves should be made to fit the empty ends of "whole" frames. Small jobs that require to be kept standing ought to be tightly corded and put on galleys, which would be out of the way on these shelves, and could easily be got at. But so soon as a job is done with, let it be distributed as speedily as possible ; and no forme that has been unlocked on bulks, boards, imposing-stone, or anywhere else ought to be allowed to stand long before being cleared away—to prevent "pie." Leads, reglets, rules, &c., &c., that are turned out in distribution ought to be cleared away at once.

A forme-rack ought to be in every office ; and jobs requiring to stand in chase should have a label attached to the outer edge of the chase, on which is written a description of the job.

REGLETS, FURNITURE, ETC.

Out reglets to the lengths required for different-sized bills, commencing at crown quarto, and wood furniture and side-sticks to pica ems, commencing from about eighteen ems, where no metal furniture is used, and increasing in length by two ems up to say fifty ems, and over that by four ems. Keep "sets" of furniture, with side and foot-sticks for different sizes of bills, especially for those most required ; and when not in use tie up and keep them in pigeon holes, or in any other place where they will be always at hand. Metal furniture and quotations ought to be in every jobbing office.

DISPLAY.

I will not attempt to lay down imperative rules to guide the compositor to display every class of work ; although I may say all depends upon the proper arrangement of lines of various lengths, and the proper selection of different faces and sizes of type, which, by harmoniously blending, will produce the best

effect; and in the case of posters, &c., they must be so arranged that the purport of the announcement can at once be perceived. Heavy lines ought not to follow each other without being relieved by lighter ones, and full lines must have two or three shorter lines of various lengths between them to permit of showing to advantage. It must be borne in mind, however, that the display which would be considered good for a poster is not suitable for a card or circular, or for any other description of fancy-work. The display of a job must be in keeping with its character: for a poster it must be done with the object of catching the eye—bold and effective; for cards, circulars, heads, memorandums, note headings, &c., it ought to be more artistic. Proper “whiting” (leading or spacing-out) of lines is most important. By properly whiting, a job but indifferently displayed will be rendered passable; but a job, however well displayed, if improperly whited, may be utterly spoiled in appearance. The better to illustrate my meaning, I give the following on the opposite page, “whited” properly and improperly.

Beside the illustration given of a displayed circular, a very plain and satisfactory job can be produced by simply running the type in script, italic, or even roman, without display, in the following manner—

New Drapery Establishment.

—o:—o—

MISS J. VERNON

BEGS respectfully to inform the Ladies of Middlesbro' and neighbourhood that she will open, on the 1st July, the premises, 80, Linthorpe Road, with a choice selection of Millinery Goods, all the Latest Styles in Bonnets, Hats, Feathers, and Flowers from the best houses.

An early call is respectfully solicited, Miss V. feeling assured that an inspection will well repay intending purchasers.

—o:—o—

NOTICE OF REMOVAL

TO

SOUTH STREET.

—O:O—

J. K. PICKERING,

BOOT AND SHOE MAKER,

(Late of Short Street),

In announcing his Removal to more convenient and central premises, feels it his duty to thank his friends for the very liberal support he has received since he commenced business; and, in soliciting a continuance of the same, assures his patrons that all orders entrusted to him shall have his personal punctual attention.

—O—
REPAIRING BY PRACTICAL WORKMEN.

NOTICE OF REMOVAL

TO

SOUTH STREET.

—O:O—

J. K. PICKERING,

BOOT AND SHOE MAKER,

(Late of Short Street),

In announcing his Removal to more convenient and central premises, feels it his duty to thank his friends for the very liberal support he has received since he commenced business; and, in soliciting a continuance of the same, assures his patrons that all orders entrusted to him shall have his personal punctual attention.

—O—
REPAIRING BY PRACTICAL WORKMEN.

JOB-WORK—DISPLAY.

PROPERLY WHITED.

IMPROPERLY WHITED.

The following illustration of a poster overcrowded with full lines, and the same relieved with light and short will further explain the meaning of what I have said—

CLEARING OUT
AT
A GREAT SACRIFICE
T. SIMPKINSON'S
STUPENDOUS STOCK
OF
DRAPERY,
FEATHERS, FLOWERS,
AND
FANCY GOODS
Will be CLEARED OUT at a
Reduction of 50 per Cent.

BADLY DISPLAYED.

CLEARING OUT
AT A
GREAT SACRIFICE!
T. SIMPKINSON'S
STUPENDOUS STOCK
OF
DRAPERY,
FEATHERS, FLOWERS,
AND
FANCY GOODS
WILL BE
CLEARED OUT
AT A
Reduction of 50 per Cent.

RELIEVED WITH LIGHT AND SHORTER LINES.

set posters of this description, or any that may require every line to be displayed, first glance over the copy and which shall be the most prominent lines. Set the lines upon, and lay them on the imposing-stone about the space apart you would like them to occupy when the bill is set; and then fill in the secondary and catch lines. The secondary lines should be set lighter or in such types as are best adapted to heighten the display of the principal ones; and only enough to drive the bill out to the proper length. In the margin on the opposite page, for instance, the lines "Clearing," "J. Simpkinson's," "Drapery," "Fancy Goods," and "Reduction of 50 per cent." would be set first, and laid on the margin, and then the other lines filled in. The bill should be set in regular characters, either in the style of notes or letters, and signed by the printer, and ought to be run on, without any attempt at display—

REGULATOR FOUNDRY,

MIDDLESBROUGH,

SEPT. 20, 1875.

Gentlemen,

We have pleasure in informing you that our Foundry is now complete, and we are in a position to undertake every description of Metal and Brass Castings, &c.; and we beg most respectfully to solicit your patronage.

We shall be glad to furnish Estimates for whatever you may require.

We are, Gentlemen,

Yours faithfully,

is, invoice headings, memorandums, &c., afford infinite scope for display, and, according to the fancy of the compositor, according to "orders," are set in plain, bold, small, or fancy type, or in script.

Instead of giving pages of matter descriptive of the methods of composing billheads, memorandums, note-headings, &c., which would only embarrass the young compositor, I select the following to illustrate various methods of displaying such jobs :—

THORNABY ROAD,

Stockton, 187

Bought of WM. CRAGGS,

GROCEER, TEA DEALER, AND PROVISION MERCHANT.

DUNDAS STREET,

Middlesbrough, 187 .

To MELLANBY & SONS,

IRON MERCHANTS.

DURHAM, 187 .

To FRANK STRAP Dr.,

BUTCHER.

CHURCH-STREET.

Middlesbrough, 187 .

To Ralph Hobbs,
Surgeon.

Attendance and Medicine. . £ " "
Particulars if required.

MEMORANDUM.

FROM
JOSEPH HENRY,
Tea Merchant,
STOCKTON.
Residence: Gilkes Street,
Eaton.

To.....
.....
.....
..... 187 .

Furniture Dealers. Upholsterers. & Undertakers.

MEMORANDUM.

FROM
J. CORNER,
158, PINE STREET,
MIDDLESBROUGH.

To.....
.....
..... 18

CHEAP PAPER-HANGINGS.



*24, South Street,
Middlesbrough-on-Tees.*

_____ 187 .



*Stanhope Street,
Liverpool,*

_____ 187 .

**Middlesbrough Academy,
Middlesbrough.**

_____ 187 .

*Tooley, Robertson, and Co.,
54, Great Oramonde Street,
Newcastle-upon-Tyne.*

NOTE HEADINGS.

Curved lines introduced by way of variety sometimes enhance the beauty of display. Brass curves and curvilinear furniture have been introduced to the trade to facilitate the forming of curves, and of course are useful. Where, however, such appliances have not found their way into an office, and the compositor desires to introduce a curved line, I consider the best method is, in the first place, to set up the whole of the job with the exception

THOMAS MOORE,
PRACTICAL
Brassfinisher and Tinsmith,
OAK STREET,
MIDDLESBROUGH.

of the curved line; slide it on the imposing stone, and place the furniture round it. Slackly quoining the side-stick, open the page where the line is to be introduced, and, having previously prepared the curved line, insert it, using quadrats, quotations, or whatever is most convenient, in the manner indicated, to secure it in its place. Tighten the quoins gradually, and lock up.



To form the curve it is best to cut brass rule to about the height of a lead, and it may be bent to the desired curve by beating it on a piece of round wood. The rules and quadrats are left type-high to better illustrate the mode of procedure.

THE LETTER-PRESS PRINTER.

THOS. PARKINSON,
DECORATOR,
Painter, Grainer, Sign Writer,
GLASS GILDER AND EMBOSSEK,
35, GEORGE STREET,
MIDDLESBROUGH.

BUSINESS CARD.

Joseph Henry Gilbert;

17, WEST STREET, NORMANBY.

VISITING CARD.

The following examples of different styles of titling are copied from works, the types used being as nearly as possible reduced to conform to the size of the pages. They are selected more on account of the little display they require than for anything else; for it often occurs that the compositor who is not familiar with the composition of titles is more puzzled how to make a respectable title out of a few lines than he is where

material for display is more profuse. The illustrations given will guide the compositor in the display and whiting of titles, which is of a different character to that of general jobbing-work.

PRAISE AND PRINCIPLE:

OR,

For what shall I live?

BY

MARIA M'INTOSH,

AUTHOR OF "CHARMS AND COUNTER-CHARMS."

*"Lord of himself, though not of lands,
He having nothing, yet has all."*

LONDON:

GEORGE ROUTLEDGE & SONS,
THE BROADWAY, LUDGATE.

OUR

UNTITLED NOBILITY.

BY

JOHN TILLOTSON

Eight full-page illustrations.

LONDON:

GAILL & INGILS, PATERNOSTER ROW.

SOUVENIR

OF

Modern Minstrelsy.

A COLLECTION OF ORIGINAL AND SELECT
POETRY BY LIVING WRITERS.

SECOND SERIES.

LONDON:
SAMPTON LOW, SON, & CO., 47, LUDGATE HILL.
1844.

ANDREW TRÜDGER'S OBSERVATIONS:

A COLLECTION OF TEMPERANCE
SKETCHES AND STORIES.

BY
J. S. CALVERT.

MIDDLEBROUGH: CALVERT.

IMPROVED
PRONOUNCING DICTIONARY

KAVANAH:

A TALE.

OF THE
ENGLISH LANGUAGE.

BY NOAH WEBSTER, LL.D.

BY
HENRY WADSWORTH LONGFELLOW.

Author of "Evangeline," &c.

CONDENSED AND ADAPTED TO ENGLISH ORTHOGRAPHY
AND USAGE, WITH ADDITIONS,

BY CHARLES ROBSON.

ILLUSTRATED
WITH ORIGINAL DESIGNS BY BIRKET FOSTER.

TO WHICH ARE ADDED
ACCENTUATED LISTS OF SCRIPTURE, CLASSICAL, AND
MODERN GEOGRAPHICAL PROPER NAMES.

LONDON:

WARR

LONDON :
W. KENT AND Co. (LATE D. BOGUE),
84, FLEET STREET.
MDCCCLXXIII.

PENNY READINGS

AND

RECITATIONS,

IN PROSE AND VERSE,

BEING INTERESTING AND INSTRUCTIVE
SUBJECTS, HUMOROUS, HISTORICAL,
SCIENTIFIC, AND WITTY,

ADAPTED FOR EVENING PARTIES AND SOCIAL
GATHERINGS.

BY PROFESSOR DUNCAN.

SECOND SERIES.

WAKEFIELD:
WILLIAM NICHOLSON AND SONS.

No. 20.]

THE

[March 15.

STOCKTON CRITIC:

A

LOCAL MISCELLANY,

CONTAINING

A CRITICAL AND HISTORICAL ACCOUNT
OF THE CHURCHES AND CHAPELS,
AND PREACHERS AND PEOPLE,
OF THIS TOWN, ETC., ETC.

BY CRITICUS.

Published on the 1st and 15th of each Month.
PRICE ONE PENNY.

MIDDLESBROUGH:

J. GOULD, PRINTER, 24, SOUTH-STREET.

In the hope of assisting the compositor in the composition of posters and hand-bills, I will give a few illustrations, with remarks on what I consider the most expeditious modes of setting the same. The following is the usual style of sale bill in the North of England—

MIDDLESBROUGH-ON-TEES.

IMPORTANT SALE OF VALUABLE MAHOGANY
HOUSEHOLD FURNITURE AND EFFECTS.

MR. J. HEWARTSON

Begs to announce that he has received instructions to

SELL BY AUCTION,

AT HIS CENTRAL SALE ROOM,

On Tuesday, November 10, 1876,

THE VALUABLE HOUSEHOLD

FURNITURE

AND HOUSEHOLD APPOINTMENTS.

THE SITTING ROOM

Comprises Mahogany Sofa, in hair-seating; Mahogany Easy Chair, spring stuffed, in hair-seating; set of six Balloon-backed Chairs; massive Mahogany Centre Table, on pedestal; Wheeler and Wilson Sewing Machine, in perfect working order; four Pictures, in gilt frames; sweet-toned PIANO-FORTE, in Rosewood Case.

THE BREAKFAST ROOM

Comprises Couch, Easy Chair and six single Chairs, Mahogany Centre Table, Stand Table, Carpet and Hearth Rug, Gas Pendant, Fender and Fire-irons, three Pictures in maple frames, Venetian Blinds, &c.

THE BED ROOMS

Include full-sized Iron Bedsteads, Tudor Bedstead, three prime Feather Beds, Bolsters and Pillows, Drawers, Dressing Tables and Bed-room Appendages, &c.

Sale to Commence at ONE o'clock.

Central Sale Offices, Middlesbro'.

Printed at the Office of J. Gould, South-street, Middlesbro'.

Suppose the foregoing to be a double-demy poster. First of all, lay your chase on the imposing stone and "dress" it with furniture, leaving the sidesticks on one side. Set the whole of the body of the bill from the word "Furniture" to the imprint; you will then find exactly how much space is left for the heading. Set the word "Furniture" in as bold a type as you consider the space at your disposal will warrant—it being the principal line. Then commence at "J. Hewartson," and set the lines down to "Furniture," remembering at the same time you must leave room for the heading. Having done so, set the top line and empty it; you will now know the amount of space left for the lines "Important Sale," &c., and they can be displayed more or less to fill that space, so as to make the bill, when finished, the proper length. By using ordinary judgment, and following these instructions, there need be no alteration in the size of any line in the bill either to "drive out" or "get in;" so that as soon as the last line is emptied you may place your side and foot sticks to the forme, lock up, and pull a proof.

P	RINCE OF	WALE	MUSIO HALL,	Monday and during the Week.	First appearance of	"I am Going."	The Great Ticket-of-Leave Man.	First appearance of	BARITONE.	Mr. & Mrs. J. HARRISON Duett's, &c.	Clog Dancer.	Stamp Orator.	AS USUAL.
S													
CANNON STREET.													
JOS. ROBERTS													
JEFFERSON													
HARRY RIPLEY													
JIM SMALING													
TIME AND PRICE													

Set two-colour bills as ordinary bills; lock up, and pull proof on dry paper; decide which lines shall be in a different colour; then unlock the forme and take them out, putting in the exact amount of white required to fill the openings, and lock up. If it

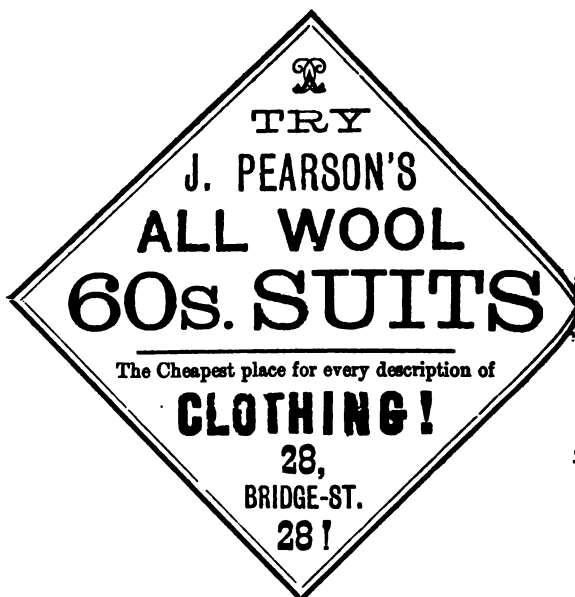


led to print both formes together, and transpose them for id colour, of course the two formes must be imposed, like ple, in one chase; if intended to be worked separately, to make up the second forme in a chase by itself. First proof down the centre to measure with. Then dress id drop in the lines taken from the first forme; lay the roof on the furniture with the folded edge against the ig of the lines, and make each line fall in the EXACT in the chase that it occupies in the proof, by placing er white between them. Lock up, and both formes are be worked off. By imposing them in a chase side by head to foot they may be worked together without trans- by merely turning the sheet for the second colour. At ints would be used; at machine, the sheets would be fed ge on the opposite side of the machine from the feeder irst colour, and to the gauge towards the feeder for the colour.

s and handbills may be displayed in many ways with e without adhering to the usual method of using only

ROYAL ALHAMBRA PALACE.	
Monday, and during the Week.	
ICARDO	COME AND SEE
TTISTS,	THE
DANCERS, AND	GREAT
ICALISTS.	FAMILY!
ES AND TIME OF OPENING AS USUAL.	

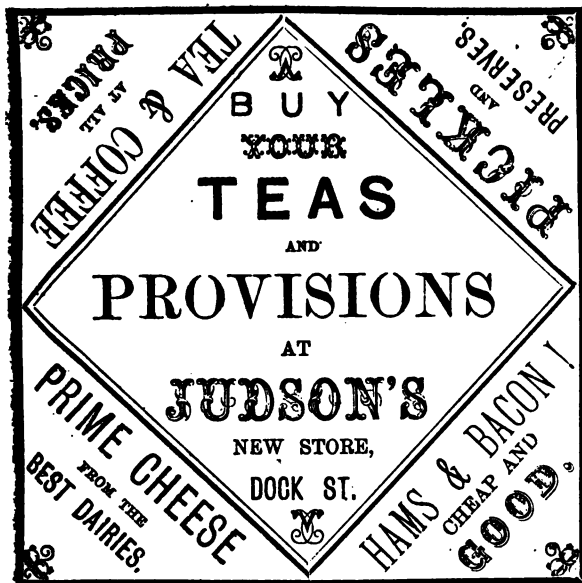
lines of various sizes and different varieties of face. By introducing a line, especially where bills contain only a ls, in an oblique direction, or in any manner which will variety, an effect pleasing and striking may be obtained.



Although small bills of the above description are not considered easy to compose, they certainly are not difficult, if properly managed. Cut four pica reglets to the length required to leave a sufficient margin on the paper, mitring the ends; place the ends together and tightly cord the square, passing the twine half-a-dozen times round, but not allowing the cord to overlap. The rules of the above will illustrate the manner of cutting the reglet to form the frame of the square. Set the principal line of sufficient length to fill the centre, place a lead on each side, then drop in the following and preceding lines, of course reducing the length of the leads to suit the lines within the square. When all have been set, proceed to space out each line; and when that is done, slide the bill off the galley, impose and lock up *without*

removing the page-cord, which will prevent disarrangement of the lines. If carefully tied, the cord will cause no inconvenience.

If the example were a poster, the only difference in setting it would be, instead of making a square with four pieces of reglet, a square should be made inside a chase, side-sticks forming two sides, with quoins inserted to keep them from moving.



Bills in the shape of the above are set in the same manner as the one already described, with the exception of the central square, which can be formed by inserting rules or reglet, as in the illustration.

Many-sheet posters are formidable only when there is no room to set them as one bill, or when the type is not suitable for the job. A line or two cut for the occasion will surmount the latter

difficulty; and a little calculation the former. Of course where a six-, eight-, or nine-sheet poster can be set and laid out on the office-floor, it can easily be subdivided and then worked off. Where there is no room to afford such facility it becomes necessary to make the division in the copy. We will suppose that the copy for a nine-sheet poster reads: "*Prince of Wales Music Hall, Monday next, Feb. 6, and every evening during the week. The Wondrous Leotard on the Flying Trapeze. Supported by a brilliant Company of Star Artistes. Time of opening and prices as usual.*"

Before proceeding to set this as a nine-sheet poster—if it cannot be set and laid out on the office-floor—it will be necessary to divide the copy as nearly as possible, and make a rough sketch of the bill. Count the letters in the principal display lines, counting the space between each word as one letter, and divide into sections, each section to occupy a sheet, something after this manner:—

PRINCE OF MONDAY And Every Evening during the THE	WALES MUSIC HALL MONDAY NEXT, Every Evening during the WONDROUS	MUSIC HALL FEB. 6, Week.
LEOTARD FLYING TRAPEZE!	ON THE	
STAR Time	Supported by a Brilliant Company of Opening and Prices as IMPRINT.	any of ARTISTES usual.

Having finished the sketch, commence by setting the principal line, "Prince of Wales," &c., in such type as will extend across the three sheets. Set the secondary lines, taking sufficient to make a full line in the middle sheet; and should any drive over, leave an equal number of types from the beginning

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and the end, to fall in the sheets on either side. It will be in practice that but few of the small lines will drive over the outside sheets. When the middle sheet has been filled, lay it up and work off. After working, wash the forme and lay the sheet on either side can now be commenced ; and in so doing, use the reglets that were used in whiting out the middle sheet. If you prefer sheet 1 to be set after sheet 2, of course the position of lines belonging to that sheet must be spaced to the end of the lines ; where catch or small lines have occurred in the middle sheet, quadrats or furniture of the same body must be used in the outer sheets, so that, when printed and placed side by side, the line will range exactly, and the sheets when united appear as one poster. Proceed in the same manner with the remaining sheets. The margin of the sheets when worked should be as represented in the example given. In the three outside sheets (1, 4, 5) a little margin must be left at the end of the lines, to allow the middle sheets being pasted to it. The middle and outer sheets should be printed close to the front edge of the galley, all the margin being left at the end of the lines. At the back of the first and second sheets also a little margin must be left, and the second and third sets of sheets be printed close to the first. Where, however, there is convenience sufficient to allow of the principal lines of such posters being set and laid on the floor, the difficulty of setting many-sheet bills is considerably diminished.

When display lines require spacing between each letter to make them the desired length, the space should be so regulated that the letters may, as far as possible, appear to be at equal distances. For instance, less space is required between letters and all letters standing apart from each other in like manner than between such as HI and those which stand close.

In lines of capitals, clarendons, &c., which are not condensed, the space corresponding to the face of the types ought to be placed between the words—two thick spaces or an em quad. Expanded and large-sized heavy-faced type will advantageously stand in wide space ; but less should be used where the lines are composed of condensed type. Lines having spaces between each letter require proportionately extra space between the words.

In circulars, cards, and other fancy work, where an imprint may be allowed, the imprint should be set in the smallest type, and placed at either of the bottom corners of the job.

In almost every description of composition it will be found that a list or some other matter must be set in columns. When this is the case, even if it consist of three, four, or more columns, it will be found most expeditious to set each column with a separate justification, in the same stick that is used for the job. For example, we will suppose the following to be part of a job set to eighteen ems:—

COMMITTEE.

MR. EDWARD WRAG	MR. JOHN HAGUE	MR. JOSEPH SEDGWICK
MR. HENRY JOHNSON	MR. JOHN YOUNG	MR. RALPH WILSON
MR. THOMAS MOORE	MR. THOMAS YOUNG	MR. JOSEPH BATE
MR. JOHN BASHFORD	MR. JAMES FISHER	MR. GEORGE THOMPSON

Being three columns, each is six ems wide. If it is intended to set the whole in one measure, the first column must be justified against a twelve-em lead or clump, thus:—

MR. EDWARD WRAG

Then take out the twelve-em, and space out the second column against a six-em,

MR. EDWARD WRAG MR. JOHN HAGUE

Now remove the six-em, and let the last column fill the space left, and the first line will appear thus:—

MR. EDWARD WRAG MR. JOHN HAGUE MR. JOSEPH SEDGWICK

Proceed with each succeeding line in the same manner; and if sufficient care is bestowed on the justification of each column, they may be set to any length with as much regularity as if a separate stick were used, with column rules dividing.

If it be necessary to insert rules, a thick lead placed in the stick at the beginning or end of the lines (if eight-to-pica rule be used) would, when removed, allow for the rules; and in that case the second and third columns should be indented an em or em.

TABULAR AND TABLE-WORK.

Tabular and table-work embrace every description of job set in columns, whether such columns contain matter or not. It is considered the most difficult description of composition; and, with

the exception of mathematics, really is the most difficult. Table-work requires accurate justification, and, in complicated tables which must be confined to certain sizes, very careful measurement and calculation. Where a table, however, is set as a job, to make what size it may within certain limits, the task of putting it together will not be difficult, though it may be tedious.

Much in table-work must be left to the judgment of the compositor, who must decide, according to the description of the table, how and with what it may be "built up" with the least consumption of time, taking into consideration the material at his disposal. In some houses the composition of a difficult table-page would appear almost an impossibility, the material not being at all suitable for such work—so the ordinary workman would imagine. The "man of resources," however, will set to work, and, to the astonishment of his fellow-workmen, and even himself, produce that which it was imagined could not be "got up" at all. I will not here advocate the "building" and "fudging" which must be resorted to under such conditions. neither will I mention the foreign and strange substances that the compositor must sometimes introduce to accomplish such a feat; but supposing that offices are tolerably supplied with the requisite material, I will endeavour to lay down a few rules for setting certain classes of table work, which may act as useful hints to the workman.

If a table be expected to come into a certain space, the whole of which space, however, it is to occupy, the compositor must note the number of columns the table contains, and the width the whole combined must make. For example, take a table to consist of twenty-four columns, which is to be inserted in an 8vo work as one page, the page being 22 cms wide and 36 long. The first thing to be found out is the width that can be allowed for each column, which can be done in this manner:—The 24 columns require 23 perpendicular rules, for which, if eight-to-point type be used, an allowance of 3 cms must be made, leaving 19 cms to be divided into the 24 columns. The best method of finding the space between the columns is to set lines of long primer and other type in quads to 19 cms, and whichever comes nearest to the measure, allowing an em for each column, must be chosen as the width.

be allowed between. The table may now be commenced. If the columns are blanks they may be composed of quadrats; if they consist of figures, the exact size of type the columns will allow can be arrived at.

When the body of a table is composed entirely of figures it should be set as common matter (unless the page be too wide to set in one measure with comfort, in which case it would be best to set the columns in two or more measures) running on column after column across the page, thus:—

21 1 16 32 10 63 4 115 10 033 0 1
 22 1 16 92 11 03 5 95 11 033 5 10
 23 1 17 22 11 63 6 55 12 133 11 2
 24 1 17 72 12 13 6 115 13 133 16 5
 25 1 18 02 12 63 7 35 14 034 2 0

26 1 18 62 13 03 7 105 14 1134 8 2
 27 1 19 22 13 63 8 75 15 1134 16 1
 28 1 19 112 14 13 9 55 17 135 4 9
 29 2 0 82 14 83 10 35 18 635 14 1
 30 2 1 62 15 43 11 26 0 186 4 0

If space allows, a lead introduced between the figures and the rules will much improve the appearance of the work. When the body of the table has been set and rules and leads inserted, the exact width of the columns can be ascertained, and the heading set and justified to range accurately, thus:—

21	1 16 3	2 10 6	3 4 11	5 10 0	33 0 1
22	1 16 9	2 11 0	3 5 9	5 11 0	33 5 10
23	1 17 2	2 11 6	3 6 5	5 12 1	33 11 2
24	1 17 7	2 12 1	3 6 11	5 13 1	33 16 5
25	1 18 0	2 12 6	3 7 3	5 14 0	34 2 0
26	1 18 6	2 13 0	3 7 10	5 14 11	34 8 2
27	1 19 2	2 13 6	3 8 7	5 15 11	34 16 1
28	1 19 11	2 14 1	3 9 5	5 17 1	35 4 9
29	2 0 8	2 14 8	3 10 3	5 18 6	35 14 1
30	2 1 6	2 15 4	3 11 2	6 0 1	36 4 0

Age next Birth-day.	Annual Premium Payable during life.	Annual Premium limited to			Single Payments.
		21 Payments.	14 Payments.	Seven Payments.	

Having inserted leads and rules, and set the heading, the latter may be lifted from the foot of the table to its place at the top of the columns, and the table is complete; the headlines, if any, may now be added.

Some descriptions of tabular work containing only matter may also with advantage, both as regards expedition and accuracy, be composed in the same manner. For instance, the columns of a job of the following description would be more readily set in one stick, each column being justified in the manner described in page 107, than if composed in separate columns and made up afterwards.

Session and Chapter.	Title.	Extent of Repeal.
2 & 3 Vict. c. 47.	An Act for further improving the police in and near the metropolis.	Section forty-one, from "and in the case of any offence" to end of section. Section forty-two; section forty-three.
3 & 4 Vict c. 61.	An Act to amend the Acts relating to the general sale of beer and cider by retail in England.	Section ten; section thirteen; section fifteen section sixteen; section seventeen; section nineteen; also so much of section twenty-one incorporates or applies any repealed enactment.

By setting the above in one measure in the manner already described, the whites are introduced in the ordinary course of composition, in the proper columns, and each column made to range without trouble. When composed, a proof may be pulled before the insertion of the rules; and should any sentence, line or word be omitted, corrections may be made as easily as with common matter; and should such work extend over a number

of pages, the matter may be made up with as much facility as bookwork, the rules being subsequently inserted. Where columns are wide, however, the most ready method is to set them in the same manner as the columns of a newspaper, and make up after all is composed.

When columns are so narrow as to necessitate setting the headings lengthwise, they ought to be set from bottom to top and range at the beginning of the lines.

The type used for setting headings for table-work is generally about two sizes smaller than the body of the table.

In setting money columns, place an em quadrat between all single figures, and an en only before and between the double figures, thus: £10 10 10. Before commencing to compose a

1 1 1

priced list, glance down the columns to see whether there are any fractions ($\frac{1}{2}d.$ $\frac{1}{4}d.$ $\frac{1}{8}d.$) If any occur, the end of each line in which there are none must be indented an en to allow for them, so that the £ s. d. columns shall range. Where none are found in the list, of course no indention will be required.

In setting poetry, any line which may turn over ought to be indented three or four ems, and the line of which it forms part spaced out to the end. When poetry is introduced in matter it should be placed as nearly as possible in the middle of the measure; it is best to set the longest line, where the lines do not vary to a great extent, and having spaced it in the centre set the other lines to the indention required by it, or allow a trifle greater indention. That is, supposing the longest line requires five ems to fill the measure, indent the whole three ems. Where the lines vary much in length, set the longest line and the shortest, and take an indention between the two for the whole. For instance, if the longest line requires an indention of four ems and the shortest eight ems, the proper indention for the whole will be six ems.

MEASURES.

I append measures for a few of the jobs most frequently required in jobbing offices, as a guide to compositors who may not be used to jobbing, and would consequently be at a loss "how to make up their stick," if ordered to set any specified size of job.

CIRCULARS.

		8vo.	4to.	folio.
		ems. ems.	ems. ems.	ems. ems.
Foolscap	- - -	16 or 17	28 to 30	36 to 38
Small Post	- - -	18 or 19	33 to 34	38 to 41
Large Post	- - -	22 to 24	36 to 38	50 to 52

BILLS.

Crown	- - -	22 to 34	36 to 38	50 to 52
Demy	- - -	24 to 26	42 to 44	56 to 58
Royal	- - -	26 to 28	50 to 52	62 to 64

Small Cards 18 or 19 ems. Large Cards 22 to 24 ems.

I have omitted measures for broadsides. Some offices adopt very wide measures; but I consider a margin of from five to eight ems, according to the size of posters, on each side, very much improves their appearance. What is meant by broadside is simply a poster set to the full size of the paper, whether demy or double-demy, and not, as many imagine, a poster set the broad way.

MUSIC COMPOSITION.

For the instruction of those who may be required to set music I extract the following from the *American Printer*, by Thomas Mackellar (Philadelphia: Mackellar, Smiths, and Jordan):—

"A knowledge of the rudiments of the art is essential to the correct and expeditious composition of music type; for, unless the compositor is acquainted with the relative type-values of the notes and rests, he cannot apportion them properly.

"The manuscript copy is given to the compositor, with directions regarding the dimensions of the page required and the

se of type to be employed. He counts the number of measures the piece, and allots to each measure the amount of ems in length which the page will permit, so that there shall be a general equality of space throughout the piece.

"In instrumental music, and in pieces which are not interlined with poetry, the compositor will set two or more staves simultaneously, ranging the leading notes in the under staves precisely under the corresponding ones in the upper staff; that is, a certain amount of space in each staff, in a brace, must contain the same amount of time-value. Where lines of poetry are interspersed, as in ballads and in church music, the staves are necessarily set singly; and in composing the second staff the workman must therefore constantly refer to the first, in order to make the staves correspond, proceeding in like manner with the third and fourth.

"The compositor should be careful to make the stems of all the notes in a page of the same length, except those of grace notes, which should be about half as long."

It was my intention to give plans of music cases; but finding those of the different founders varied very materially, I have refrained from doing so.

CASTING OFF COPY.

To ascertain the number of pages a certain quantity of manuscript may make in any particular size of type is a task which requires very careful calculation. Should the copy be "cut up" with erasures, alterations, and additions, the task will be found difficult; and the calculations, unless very carefully performed, may be found unreliable.

Where the copy is pretty regular and is all written upon paper of the same size, one of the best methods of proceeding is to take a folio which, judging by appearances, contains an average quantity of manuscript; and commence "even," setting on until the lines in the stick "make even" with some line in the manuscript, or nearly so. Count the lines composed, and the number of lines they take of the manuscript. We will suppose that

15 lines composed have taken up 23 of the copy, that each page of manuscript contains on an average 30 lines, and that the whole consists of 306 pages. Then proceed,—

306 pages manuscript.
30 lines in page.

9180 lines in the whole of the manuscript.
15 lines of type.

45900
9180

23) 137700 (5987 lines of type.
115

227
207

200
184

160
161

Now, assuming the pages of the book or pamphlet contain 43 lines (excluding heads and whites), we find the number of pages :—

43) 5987 (139 = 140 pages.
43

168
129

397
387

10

16) 140 (8 sheets 12 pages.
128

12

Which, if a complete work, would, with titles and blanks, make just nine sheets.

Should the manuscript be written on different sized folios, and be interspersed with erasures and interlined with additions all through, the only *safe* way is to count the number of words the copy contains.

Suppose the words number 82090, having set 15 lines, you find 184 words in them. Proceed thus :—

$$\begin{array}{r}
 32090 \\
 15 \\
 \hline
 160450 \\
 82090 \\
 \hline
 184) 481350 (2616 = 2617 \text{ lines.} \\
 368 \\
 \hline
 1133 \\
 1104 \\
 \hline
 295 \\
 184 \\
 \hline
 1110 \\
 1104 \\
 \hline
 6
 \end{array}$$

By dividing the 2617 by 48 lines, the number in each page, we obtain 60 pages and 37 lines = 61 pages.

If it appears, however, upon careful examination, that the majority of the folios of manuscript do not differ to any great extent, and that the additions and erasures are about equal, separate the folios which differ materially from the average, taking out both those that are longer and those that are shorter; count the number of lines contained in the longest and also the number contained in the shortest, and having added them together and divided them by two, the product may be taken as the average number of lines contained in that portion of copy. Should that number differ but slightly from the average of the whole, it may all be cast off as though the folios did not vary. But if the average number of lines in the long and short folios vary much from those contained in the folios of average length, the best manner will be to treat each separately.

Should interlineations, erasures, and folios of different dimensions occur throughout the manuscript only at intervals, it will be well to separate such copy from that which is more regular,

and count the words it contains, calculating each portion on its merits; and a very fair cast-off may thus be obtained.

If the work be in chapters, and each chapter ends a page, allowance must be made for short pages in proportion to the frequency of their occurrence.

ESTIMATES.

Estimate for Printing and Binding a Work of twenty-five half-sheets, 8vo. 750 copies.

25 Sheets, at 19s. 6d. per sheet*	-	-	-	£ 24	7	6
406 Reams, at 11s. 6d. per ream	-	-	-	233	9	0
Author's corrections (average 2s. 6d. per sheet)				3	2	6
Press proofs	-	-	-	1	5	0
Machining, 5s. per sheet	-	-	-	6	5	0
Binding, £2 14 2 per 100	-	-	-	20	6	8
				£288	15	8
Profit, 25 per cent.				72	8	10
				£360	19	1

Estimate for 500 Sixteen-page Pamphlets, with Covers, Title, and three pages of Advertisements.

16 pp. Long Primer, at 1s. 10d. per page*	-	£1	9	4
11 quires paper, at 10s. per ream	-	0	5	6
Author's corrections	-	0	3	6
Press proof	-	0	1	0
Printing, including ink	-	0	7	6
Covers: setting 4 pp. at 1s. 10d. per page	-	0	7	4
2 quires 20 sheets paper, at 17s. 6d. per ream	-	0	2	6
Printing	-	0	5	0
Folding, stitching, and cutting	-	0	5	0
		3	6	8
Profit, 25 per cent.		0	16	8
		£4	3	4

* To find the price per sheet or page, cast up the work or pamphlet in the manner described on page 89.

JOBING.

Estimate for 600 Double-Royal Posters.

Double-royal poster	-	-	-	-	£0	7	6
600, at 25s. per ream	-	-	-	-	1	11	6
at press	-	-	-	-	0	12	0
per lb.	-	-	-	-	0	4	0
					£2	15	0
Profit, 50 per cent.					1	7	6
					£4	2	6

Estimate for 100,000 Crown 4to. Handbills.

100,000 handbills, at 5s. per ream	-	-	-	-	£6	10	8
at 1s. 6d. each	-	-	-	-	0	12	0
8s. 6d. per 1000 pulls	-	-	-	-	2	8	9
-	-	-	-	-	0	10	0
(one day), and packing	-	-	-	-	0	6	0
					£10	2	0
Profit, 25 per cent.					2	10	6
					£12	12	6

in giving the above estimates is merely to illustrate the methods whereby a correct knowledge of the price of such jobs may be arrived at, without offering the quotations, profit, &c., as a guide. Under some circumstances the profit might be inadequate to meet the expenses whilst under other circumstances the prices might be fair or even too high.

When, of course marginal and footnotes, table and everything else whereby extra time may be consumed are taken into consideration and charged; and where in reference to the cost of paper, or any other outlay to be incurred, it is advisable to "take the benefit," the actual working out of some jobs unavoidable expenses which were never anticipated.

When given any price in the estimates for reading, &c., such incidentals under the head "profit."

NEWS - WORK.

THE news-hand is quite a distinct species of the *genus* compositor as compared with the book or jobbing hand. Having no need for the practical knowledge of the latter branches of his trade, he is at little pains to perfect himself in anything but the facility of lifting stamps; and in many instances this is cultivated to a degree of perfection little short of wonderful. Intelligence in composition, however, can no more be dispensed with by the news hand than the jobbing or book hand, though perhaps the latter may have more time to rectify his blunders—at the sacrifice, I am sorry to say, of a decent bill of wages. It will easily be understood, then, that young and energetic compositors who have little knowledge of and less inclination to study what may be called the ramifications of their trade naturally gravitate towards the news branch, where skilful manipulation is more in demand, and meets with more substantial remuneration. It is unnecessary to treat here of all the systems employed in the production of newspapers; but I will endeavour to set before my readers the most perfect methods in vogue, and begin with the following descriptions of London and Provincial morning newspapers, kindly placed at my disposal by friends who have come to my aid on a theme with which my acquaintance (unlike theirs) is more theoretical than practical.

LONDON MORNING PAPER.

The essentially variable conditions of Morning Newspaper printing in different parts of the kingdom necessitate, of course, considerable diversity in the details of procedure. The small sheet of an easy-going third-rate provincial town has no

need to resort to the expedients (born of the intense struggle for supremacy) which obtain in the case of a first-class London daily. In the latter instance, everything save absolute accuracy is rendered subsidiary to speed of production, for competition now-a-days is so keen that in order to give the latest possible news the formes are kept open until the last moment, and scarcely any margin is allowed for the contingency of accident, either as the formes are going to press or whilst in process of machining. It will therefore be easily understood that a high degree of disciplined intelligence is indispensable in a morning paper compositor; and we will select one of the most prosperous of the London dailies in illustration of the system under which he performs his labour.

The time of taking copy varies with the days of the week, but may be roundly given as six o'clock in the evening, previous to which hour the compositor is required to "get in" his distribution. Every day the available type in the formes is allotted to the compositors by "dividers," appointed from the companionship, and paid by the men themselves, who, after an inspection of each man's cases, deposit his division of type upon his frame ready to his hand when he arrives. The paper being produced entirely on the piece system, the compositor, having taken copy, strains every nerve to secure as many takings as he can whilst there is work to give out; for the time frequently arrives all too soon when the stone is clear, and the men, as they come out, write their names upon the slate, pending the arrival of more copy. It is the plan of some proprietors of morning papers to pay the compositors for the enforced idleness of slating; but in the case of the office we are instancing this boon is conspicuous by its absence. The matter is pulled in pieces about a third of a column in length, the "pull" passing in rotation round the frames; but there is no pull-block or other tangible incentive to memory transferred with it. For several reasons it has been found that the least delay is occasioned by the simple *viva-voce* system of passing the pull; and where promptitude is so necessary, the potential dilemma of a lost or mislaid pull-block is thus averted. Having pulled his proof, the compositor places his name at top, and when he receives it from the reader he is responsible

for the correction of the whole slip; unless, indeed, there be foul taking, an "out," or a "double," when he calls upon the delinquent to forthwith "bring up his stick," and is not put to the trouble, nor the work to the delay, of passing the galley. Speed being the primary concern, the takings short, and the frequent occurrence of make-evens unavoidable, even and careful spacing is considered a matter of small moment; and when one reflects that the newspaper is read but once and then cast aside, one can scarcely feel shocked at this lack of painstaking. Should the compositor receive his proof from the reading closet before he has completed the taking of copy upon which he is engaged, he is allowed to "spike" the latter, providing he has set three or more lines—that number constituting the minimum of a taking. In order to spike his copy the compositor takes it back to the copy stone, and places it upon the heap, at the same time shouting "Spike!" as an intimation to the person next out, who is bound to lift the "spiked" taking in preference to whatever may be going out, and who proceeds to set the unfinished portion. Thus the work goes on, the intervals of "slating" becoming more lengthened as the night advances, until the Printer, receiving an official intimation from the editorial regions, "cuts" the companionship, or the greater portion of it, and announces the time of taking copy for next day. There then remains only the task of writing and filing the bills. Each man is furnished with a card on which are printed the relative number of lines to the galley, half-galley, quarter-galley, and so downwards, and the prices, for each variety of type in use; as also a scale of "proportions," by the aid of which he converts the whole of his night's work into an equivalent amount of minion, which is then reduced into galleys, &c. By this means the different sizes of type are transformed into and governed by the uniform scale of minion, and the work of making out and checking the bills is thereby greatly facilitated. In most other matters of detail the work of a morning paper compositor is similar to the routine adopted in an ordinary smart news office, with the important exception (so far as his comfort is concerned) that he gets no specified time for his meals, but snatches them when he can best spare a moment. All things considered, it is

extremely questionable whether the extra pay is at all adequately proportioned to the multifarious discomforts which fall to the lot of a morning-paper hand.

PROVINCIAL MORNING PAPER.

The production of provincial morning papers differs in some respects from the *modus operandi* of metropolitan journals. In the Northern and Midland large towns, piece-work prevails, with one or two notable exceptions; while in the Western and South-Western centres, piece-work is almost unknown. In some towns of the North, again, morning-paper hands obtain a "day off" every seven or eight days, and in this respect have decidedly taken a lead of the Metropolitan compositors, whose lethargy in all matters affecting their personal comfort and convenience is incomprehensible to our Northern men; hence while we find so large a per-centage of "Westerns" annually converging towards the metropolis, on the other hand Lancashire and Yorkshire contribute a very small quota indeed to the *personnel* of London daily journals. The time of taking "copy" in the North varies from six to seven in the evening, the formes being ready for press, in some instances, for early editions, by half-past one in the morning, in others from half-past two to three. As a rule there is an absence of that "rush" and excitement deemed necessary by some London printers to the production of their daily issues; while in the more Western towns, where the paper is produced on 'stab wages, it is not uncommon for men to lift copy at four o'clock in the afternoon, and at eight to retire to supper, resuming at half-past nine, and continuing till half-past two in the morning. The enterprise of our leading provincial newspaper proprietors is well known; and although they do not "go in" for big sensations, or send out African expeditions, they display an amount of energy and tact in obtaining early news that is highly creditable to them, and has contributed in a large measure to their success.

PRESS-WORK.

THE various manual and mechanical operations of press although they do not require the pressman to be a scholar, a man of superior attainments, nevertheless require that he should be a man of intelligence, the press-room being a department of the utmost importance. To become a thoroughly practical pressman requires much more intelligence, study, and judgment than is generally supposed. Many believe that a year or two's tuition ought to be quite sufficient to make a pressman. Those, however, who are acquainted with the routine of the press-room, know that "a hand at case" (the simple picker-up of types) is not required to possess so much practical knowledge as the pressman; and the following remarks will be directed towards assisting the young printer to gain knowledge, and thus become a competent workman.

In the first place, to do superior press-work the pressman must have formes of new or good, clear, and sharp type; a good rollers in the best condition, good ink, and good paper; and ought to keep the utensils under his own control in the best state of efficiency.

I will not attempt to describe the manner of putting together a particular press, feeling assured that a person of ordinary intelligence will be able to erect any of the hand presses now in use without such instructions; but I may observe, that in the erection great care must be taken that the different parts be accurately connected, fitted and screwed together; also that the foundation on which the press is placed is unyielding and level. The latter should be carefully tested, either by plumb-spirit-level on the ribs, or on the carriage after it has been set on the ribs. Having packed the press until it is found

level, next proceed to adjust the platen, so that it shall be perfectly parallel with the carriage. One of the easiest and best methods of doing so is to place large types at each corner of the carriage, put a few pieces of wrapping or other thick paper on each of them, and then pull the bar-handle well home. Screw the four nuts upon which the platen hangs as tight as can be done by hand; and then, letting the handle go back, take a half or quarter-turn at each nut with a screw-key (spanner) until the whole are thoroughly tightened. Then test the evenness of impression by pulling the bar-handle so that the platen may very lightly touch the types; try each with the hand, and if the pressure on each be uniform no alteration will be required; but if it should prove to be lighter on one type than on another, unscrew the nut a little at that corner, and tighten up where the pressure is heavy, until it is equal at all corners. If a sufficient impression is not obtained by pulling the bar-handle "round," additional packing, consisting of thin sheets of metal, must in most presses be placed between the platen and the part to which it is fastened.

TO COVER A TYMPAN.

Tympans are covered with different materials—parchment, linen, and cotton being most usually used for that purpose; but when the finest work is required, silk is sometimes substituted, and is highly spoken of, although I cannot recommend it from personal experience.

For covering a tympan with parchment a skin ought to be obtained of an even thickness, and a few inches larger than the tympan-frame. Spread the skin on the stone the smoothest side downwards, if for the outer tympan. Lay the tympan-frame in the centre of the parchment, and proceed to cut the corners, and where the point-grooves are made, so that the edges of the parchment will freely wrap round the frame. Then mark the position of the hooks which fasten the inner tympan, and cut a small hole for each to go through. Remove the frame and thoroughly scrape, clean, and paste it. Paste the edges of the parchment to a sufficient extent all round to cover the frame, and lay the frame in its position; then turn the edge of one side

of the parchment over the frame, adjusting it over the hooks and to the point-grooves, and with a thin folder tuck it in so that it wraps altogether round the frame. Proceed in the same manner at all sides, being careful not to draw the parchment out of square. After the paste is dry, wet the parchment thoroughly—it will then shrink and become tight. The inner tympan is covered in the same manner, but with the smooth side next the platen. I would recommend that all parchments be put on dry.

To cover tympan with linen or cotton, proceed as above, but draw the material as tightly on the frame as possible, and wet after the paste is dry.

MAKING READY.

The term “making ready” implies the various operations required after laying the forme on the press, to make it perfectly fit for printing. In the first place, I will speak of making ready book-work, assuming an ordinary half-sheet of 8vo to be laid on. Clean the carriage, so that it shall be free from dust or grit; then wipe the back of the forme with the palm of the hand or a duster; and being satisfied that nothing adheres liable to interfere with the evenness of the impression, drop it on the press, with the signature on the left hand. The forme must be placed so that when the carriage is turned in it will be under the centre of the platen, where it must be secured by furniture or other means, so that it cannot be moved by the working of the press or by its being rolled.

For book-work the best packing inside the tympan, instead of the ordinary press blanket, is a few sheets of thin paper, about the thickness of 15 lb. double-crown. If the type be a little worn, put in about a dozen sheets; but if the type be sharp and new, half-a-dozen will be sufficient. If, however, the type be old and much worn, the press blanket will best bring up its face.

Take a sheet of paper from the heap; if the heap be dry paper, damp the sheet, and place it on the forme so that the margin shall be exactly the same on all sides of the paper when pulled; damp the tympan, and pull. The reason I advise damping the tympan sheet is that, when dry, it will be tight, and not liable to cause slurs by bagging. Having raised the tympan, paste the

tympan-sheet at the corners and other parts of the edges, so that it may adhere firmly to the tympan; but keep the paste off the parts where the impression comes, otherwise an uneven impression may be produced. The sheet raised from the forme and pasted to the tympan is called the "tympan sheet."

Pull slightly a sheet of thin paper of good quality, and note the impression. Where the pressure appears heavy, cut out the parts, and paste overlays on all parts where it is light; having done this, place the overlayed sheet on the tympan sheet again with another over it, and pull. If any portion of the impression is still found to be uneven, rectify it, by overlaying or cutting out as may be required; then place the sheet with its overlays, &c., inside the tympan, in the exact position it occupied outside, pasting the top edge against the tympan to keep it in its place. Pull another sheet; and if any irregularity of impression remains it may be remedied by an extra overlay or two. And bear in mind, in bringing up the forme, that a perfectly even impression is the great desideratum, and do not be tempted to bring up the light parts by extra pressure on the whole. Use thin paper of good quality for overlaying.

The points may now be fastened in the grooves. Care must be taken that the spurs come exactly in the centre between the pages, so that they may fall in the grooves of the cross-bar. It is an advantage to have points of different lengths; for by placing the longest point on the off-side, the pressman, when perfecting the sheets, is not compelled to reach to an unnecessary distance, and if any of the sheets should have been turned round while printing the first forme, it will be detected by the imperfect register.

REGISTER.

Having fastened the points, lay on a sheet and pull; then turn the sheet bottom to top, and place it on the spurs of the points so that they come through the holes they have already made, and pull again. This is for the purpose of examining the register. If the points have been put perfectly in the centre, and the turniture of the forme is true, the register should be correct. Should it be otherwise, alter the points by knocking them a little

higher or lower as the case requires; and pull and turn (perfect another sheet. If it happens that some of the pages register properly while others are out of register, the furniture of the forme must be looked to; for this is an obvious sign that the furniture is not perfectly true. If, however, the pages are all alike out of register, altering the points a little will remedy the defect.

Whether the forme is a complete half-sheet or only one off a sheet, register should be perfect before commencing to work off. The first forme of a sheet, when worked off, must be marked, by running a pencil or piece of lead along the carriage close against the chase, so that the next forme, when laid on the press, may be adjusted by the mark.

The frisket, having been previously covered with paper, is now adjusted. Ink the forme and pull a slight impression on the covering of the frisket, and with a sharp knife cut out the whole of the impression of each page, so that no part of the frisket sheet can come on the pages while printing, and cause "a bite." Ordinarily, pins are inserted in the tympan; one at the bottom of the tympan-sheet, and two at the off-side—one near the top, and the other near the bottom. Some pressmen use a piece of card instead of the bottom pin, and no pins at the side, laying on by the tympan-sheet.

When short pages occur, the resistance they exert to the pressure being less than that of full pages necessarily causes extra impression at the foot of the pages adjoining. The usual method of remedying this is by placing bearers at that portion of the forme where the short pages occur, to offer the resistance necessary to ease the impression off the pages at those parts. Reglet of sufficient thickness to stand slightly above the level of the type, placed on the chase or furniture, is sometimes used for this purpose. The reglet is pasted and laid upon the chase, and at the next pull it adheres to the frisket-sheet. But, if the forme is not too large, a wood type or two, or type-high furniture, placed on the carriage opposite the short pages, are much more unyielding and reliable "bearers," provided the forme can be rolled without interfering with them.

Twelves must be laid on the press with the signature to the right hand, nearest the tympan. The points should be both

of the same length, as the spurs of each must be at exactly the same distance from the edge of the outer pages, and they must, like the points used for 8vo, &c., fall in the centre between the heads of the pages. To make register of a forme of twelves, the sheet is perfected by turning it over from one edge to the other. If the register should be out, knocking the forme a little to one side or other as the case demands, or moving the points a little, will make perfect register, unless some fault exists with the furniture. In making ready formes in which the sheets must be turned as in twelves, register should be made before the frisket is cut; for should the forme require moving after it has been cut, in all probability "bites" will be the consequence.

With a good press, tight tympan, and paper perfectly flat, there is little fear of slurring. Slurring, however, will occur at times, from a variety of causes. The platen or tympan, or some other part of the press may have worked loose; but the most usual cause of slurring is a "baggy" tympan. By the careful and attentive pressman, such annoyances are seldom experienced. If slurring occurs, it will be best, first of all, to overhaul the press: if caused by anything defective in it, on remedying the defect (tightening up a screw or two may be all that is required) the nuisance will cease. If slackness of the tympan or the thinness of the paper be the cause of the slur, cut pieces of cork so that when placed on the furniture of the forme they will be a little higher than the type; paste them and place them where the slurring occurs, and they will be taken up by the frisket at the next pull: by bearing the paper off the type till the impression takes place, the slurring will be prevented.

While printing the second forme of—or "perfecting"—any work, the pressman must now and again carefully examine the first side, to see that the pressure of the second working is not causing a "set-off." If this is not attended to it is quite possible the work will be disfigured by the set-off appearing to an offensive degree. Should any set-off be detected, paste a thin sheet of paper at the corners, tucking the edges under both points, and fasten it over the mark-sheet; and this must be done as often as necessary.

WORKING OFF.

The forme being in perfect working order, free from slurs, and with a firm, but not heavy, even impression, the next consideration is to work it so that the colour shall not vary nor the type fill in. Having a roller with a smooth, tacky surface, of medium softness, and ink of good body, careful and industrious rolling will go far to accomplish all that can be desired.

During the whole operation of working off a forme, attention must be paid to the roller; paper, flock, or dirt should not be allowed to accumulate upon it.

When a roller is good, but has accumulated an unusual quantity of dirt, I have found it a good plan to drop a small quantity of oil on the slab, distribute it, scrape and sheet the roller well, and clean the oil and dirty ink off the slab; and then the work can be proceeded with without further delay. If a roller be washed, delay for an hour or two will be incurred to allow it to dry perfectly, or it may "peel." Should the forme have "filled in" at all, brush over with a *little* benzoline, and pull a sheet or two of soft paper, previous to cleaning the roller and slab.

If a cylindrical ink table be used, the colour may easily be kept uniform; but where there is no such appliance, the ink must be thinly spread on the back portion of the slab with either palette-knife or muller. In taking ink, great care should be exercised that too much be not taken at once; for, besides being liable to fill in the type, the appearance of the work will be spoiled by making the impression appear too black, and not uniform throughout the work. The best plan to secure uniformity in colour is, when the forme is in perfect order and the colour of the required shade, to lay a sheet on one side, so that the person rolling can regulate the colour by comparing the specimen sheet with the others as they are being worked. It is much easier to detect a difference in colour by comparison than by trusting to the eye alone. To keep a uniform colour, only a small quantity of ink must be taken at a time, and, if needed, taken often, and be always thoroughly distributed.

The pressman should glance over every sheet as he takes it off; he will thus readily detect "picks," "monks," or "friars."

In order that the edges of pages may not be filled in by the roller coming in contact with them, and to prevent "jumping" and thus causing "friars," in passing over the forme, corks (which are cut so as to stand as high as the face of the type) are sometimes fastened with composition in the gutters, backs, and at each side of the forme. With careful rolling, however, I consider it unnecessary to "dress" a forme in this manner.

JOB WORK.

The making ready of circulars, billheads, and other descriptions of fine work, as regards bringing up, should be carried on in the manner already described; and where fine hair-lines, scripts, and other delicate types are introduced, the greatest possible care should be exercised in pulling, for the least extra pressure is liable to damage such type. In rolling formes of script and other tender type, the roller ought to be placed on the forme very gently, otherwise it is quite possible to break off some of the overhanging letters or fine lines.

Bills and other heavy work, although they require "bringing up" and proper making ready, do not demand such care and attention as book and fine job work. After a proof of a poster has been pulled, and it has been corrected, examine it to see if any of the large lines, or any of the letters therein, are low. Should any prove so, underlay them with paper of sufficient thickness to make them type high. Wood type sometimes varies very much in height, and if not brought up with underlays is liable to get a less share of ink than the other portions of the forme. The forme will now require the same treatment, as regards general making ready, as has been described; but the extreme nicety indispensable in book and fine job work is not required. Blankets are the best packing for the tympan when posters are to be worked. The rollers should be soft, and the ink thin.

When formes are much smaller than the press upon which they are to be printed, place type-high bearers on each corner of the carriage, well out of the way of the roller.

MACHINE-WORK.

ALTHOUGH there are some things in common between the Hand Press and the Cylinder Machine, especially as regards the bringing up of formes and similarity of making ready, yet the great difference in their construction and operation demands more than a passing notice in this Manual. The wide difference in the mechanism between the hand press and the cylinder machine and also in the various makes of machines, and the skill-treatment required in their general management, have called into existence, within the last few years, another and separate class of workers in the business from any I have yet treated upon—the “Machinemen.” Separate, in all cases, machinemen and pressmen are not; for the necessities of many offices demand their combination in the same individual. Nevertheless, the rapid growth of machine work, the excellence expected of such work, and the great practical skill and experience required to produce that excellence, have combined to introduce an independent class of operatives skilled in that particular branch who are recognised as “machinemen” pure and simple, combined as such, recognise no other business, and have their own Society, similar to those of the compositors and pressmen.

My remarks on the subject of machines and machine-work must be taken as those of a workman experienced only in the management of machines to be found in most jobbing and book houses—the single cylinder—and not as those of the machineman proper. I will, however, do my best to help those who have yet to learn to work the jobbing and book-work machine; and I hope my observations, combined with the prac-

tical knowledge to be gained only by experience, will enable the intelligent workman to become an efficient machinist.

The rapidity with which machines are worked, the intricacy of their mechanism, and their consequent liability to be damaged by the slightest oversight on the part of the machine-minder, entail upon those who undertake their management the most scrupulous attention.

The erection of machines I will not attempt to touch upon, further than to mention that some are so easily erected that they may be put up by an ordinary pressman. Others, again, are most difficult, and should be erected and put into working order by their makers; for most machines, although strongly made, possess weak points, and will certainly be damaged or broken if any attempt be made to start them when improperly put together. Those who aspire to take charge of a machine ought to make themselves acquainted with its construction; for if thoroughly informed on that point they will be better able, if anything goes wrong while working—and in some machines this occurs too frequently—to see where the disarrangement has taken place, and know how to remedy it.

The foundation for all machines must be firm; for if they are yielding and springy, the vibration caused in working will, in all probability, interfere with and spoil the impression, and is certain to cause greater wear and tear than would take place in a properly bedded machine.

Cleaning and oiling must be unceasingly attended to; in the morning, especially before starting a machine, the attendant ought to go round it and put a few drops of oil in every oil-hole—a few drops being better than an overflowing quantity—oiling at intervals also, during the day, the parts where there is most friction. The whole of the parts adjacent to the oil-holes should be wiped with a piece of clean waste previous to oiling, and the other portions of the machinery should be kept scrupulously clean. If at any time an inferior quality of oil has been used, which is inclined to clog, I have found oiling with paraffin of very great service; it loosens the clogged oil, and soon causes the machine to work freely. After the paraffin has been used for an hour or two, resume the usual lubricant. All the oil-holes must

occasionally be cleaned out—a penknife or piece of wire being used for that purpose, and the dirt wiped off with waste. Neats-foot and lard oils are both good lubricators; but I prefer the former.

MAKING READY.

The most perfect jobbing and book-work machines now introduced to the trade require but little special management, making ready on them being, in my opinion, almost as simple an operation as on the hand press. A great number of machines still in use, however, not being the “most perfect,” making ready on them is sometimes a difficult undertaking. It will also be found in working, that different classes of machines demand, in some measure, different treatment. But the general practice of making ready here described will hold good, with some few modifications, on almost all job and book machines.

I will again, for illustration's sake, select a book-work forme, and proceed step by step till it can be assumed that the making-ready is complete.

Let us presume that a poster has just been worked off and a book forme must be next laid on. In the first place the machine must be thoroughly cleaned down. If the same rollers are to be used that were used for the poster, they should be carefully scraped and then well “sheeted.” While the cleaning down is proceeding, slightly damp a few sheets of good paper, and paste them at the outer edges. Fasten one edge of a sheet inside the cylinder, and carefully smooth it round, till the other pasted edge adheres to the outside of the cylinder, and proceed in the same manner with all the sheets. They must fit closely to the cylinder, and be larger than the forme. I use six or seven sheets 38 lb. fine double-demy for this “packing.” Less might be used with new type. If the machine be an old one it will be necessary to bring up the bearers so that the cylinder will run upon them with some little pressure; but with many of the best made machines, this is of less importance.

Having packed your cylinder, clean the coffin (carriage) of the machine, and, after wiping the back of the forme with the palm of the hand or a duster, drop it on the machine with the

signature next to the ink-slab. Place it in such a position that when a sheet of its paper is run through it shall appear exactly in the centre; and secure it with furniture, &c., so that the working of the machine cannot move it. To facilitate this a gauge ought to be cut with card or a piece of reglet, the exact length of the space between the ink-slab and the edge of the cylinder as it takes the sheet.

The forme being secured on the coffin in its proper position, run a sheet through, and note the impression; should sufficient appear on the forme, it will only require to be "brought up." If headlines or any other parts appear heavy, cut such parts out of the top sheet of packing with a penknife, and with thin paper overlay all parts which appear light, pasting each overlay in the exact position it should occupy on the packing of the cylinder. Having done so, pass another sheet through, and again carefully examine the impression. If any parts still appear too heavy, cut out those parts, cutting down where needed to ease off the pressure, and patch with overlays where any parts still appear light. Repeat, if necessary, till the impression is perfectly even. By using sheets instead of a blanket round the cylinder, a much more solid impression is obtained. The bringing up being completed, pass another sheet through and perfect it for register. Points are sometimes used on machines, but, with proper laying on, register can be got without them. Should the register not be perfect, a little judicious shifting of the front and side gauges will rectify any imperfection, provided the furniture of the forme is not in fault.

If slurring takes place at the gripper- or leaving-edge of the forme, the most probable cause is loose packing. With some machines, to prevent this description of slurring is an extremely difficult matter; even where the packing lies thoroughly close to the cylinder. It is mostly caused by the machine being worn and having become "shaky." If slurring occurs at the gripper-edge, a good plan to abate the nuisance, and one which generally succeeds, is to nail pieces of thin leather on the bearers just opposite the edge of the type, so that the cylinder, in revolving, may "bite" upon the leather before giving the impression. This has a tendency to steady the cylinder, and will in most

cases have the desired effect; but where machines are very shaky, it may only partially remedy the evil. If the slur occurs as the sheet leaves the type, the same plan should be adopted at the opposite side of the forme; and when extra pressure is given on leaving the forme, or on any part of it, the same plan will ease off the impression. Sometimes this takes off too much impression opposite the part of the forme where the pieces of leather are fastened; but this can be restored by an overlay.

The ink-duct being supplied with ink, and the vibrator (sometimes called ductor) properly fixed, run the machine through a few times to "ink up," allowing the ink to be supplied sparingly at first. Then run through a few sheets to try the colour. If this is satisfactory, the machine may be started.

WORKING OFF.

The machine-minder must examine every sheet for some time after starting, to note whether any change in colour has taken place, it being quite possible, indeed probable, that the vibrator may supply too much or too little ink at the commencement, and it must be regulated accordingly. As at press, a constant inspection of the printed sheets is absolutely necessary.

In feeding, great care must be taken that each sheet is laid up to both side and front gauges. If this is not properly done the register must, in consequence, be imperfect. In perfecting a sheet or half-sheet of 8vo, and other formes which require turning in like manner, the sheets must be laid up to the gauge on the opposite side to the one used in printing the first forme. Twelves, and other formes which are perfected by turning the sheet in a different manner to the octavo, cannot be properly registered without first turning the forme on the machine, which must be done before printing the second side, so that the register may not be imperfect through the paper varying in width. Of course, if the sheets were all of the same width, the forme would not require turning to secure good register. Set-off sheets, as at press, must be used when needful.

Whilst working off, particular attention must be directed to the rollers; dirt must not be allowed to accumulate on them. Simply washing the ink slab will remove a considerable quantity

of dirt from good rollers, and will in some instances clean them sufficiently to allow of a job being finished without further delay. The usual plan in some book offices where I have worked (as compositor) was to wash the rollers every dinner-time and also in the evening before leaving the office. This I consider a bad plan; for under such treatment the rollers are soon deprived of their tackiness, and the face becomes leathery and cracked. A better plan is to slightly oil, scrape, and sheet them: if good rollers, they can be thoroughly cleaned by this plan, without doing them any mischief. If they are hard, rub them down with a slightly damp sponge before using them. It will be found in working long numbers that the ink in the duct becomes gradually charged with flock and other dirt, which has been left by the vibrator on the ink-cylinder. This, if allowed to accumulate to any great extent, will interfere with the supply of ink required for the forme, by partially obstructing its passage through the ink-duct; and will thus cause the forme to work light. It is therefore necessary to clear out the duct occasionally and renew the supply of ink.

When working formes with ink which is inclined to dry quickly, it is advisable before leaving off for the day to drop a little oil on the slab and run the machine through a few times to well distribute it. This will prevent the surface of the rollers being spoilt by allowing the ink to dry on them. The forme must be brushed over immediately after. Before commencing in the morning, scrape the rollers and clean the machine-slab.

For book and other light work requiring extra strong ink, the rollers should be moderately tough and elastic. Hard rollers, ought never to be used by themselves, on account of their liability to "jump;" but, if in good condition, they may be used with advantage in conjunction with rollers which are more pliable.

When a machine is used principally for posters, news, and other rough work, and only occasionally for book-work, as is the case with my own, and especially when a short number is all that may be required of a book-work forme or other light job, it is most expeditious to put the ink on the machine slab from time to time with a hand-roller, having distributed it on an independent ink-

slab. By so doing, no time is wasted in cleaning out the duct, supplying fresh ink, and getting the supply of ink so that the vibrator shall supply only the proper quantity is a saving both of time and labour.

JOB-WORK.

For all light job-work I would recommend the same for the cylinder and the same general making ready described for book-work. For rule-work this is adapted, as the sheets may be cut out to ease the impression any rule or portion of a rule. For posters a good stout blanket is best. As to underlays and other matters in connection with making ready a poster forme, proceed in the manner recommended for doing the same at press; and after the forme has been dropped on the machine, unlock and plane it well, and lock up. If not unlocked and planed after being up, both reglets and spaces will work up. On this account laying at machine should be avoided as far as possible, if long numbers are to be worked.

For working posters on machine, the rollers should be set thicker than for fine work, and the ink thin. Black ink can be brought to any consistency by using benzoline, which allows of working quicker, without spreading, than when reduced with turpentine.

BLANKETS.

Machine blankets must be well cleansed occasionally, as they are liable to become so foul and uneven with dried ink and dirt as to injure the type, and render the bringing to forme a work of considerable time and difficulty. They should be soaked for an hour or two in water in which a little soda has been dissolved, and then well soaped and rubbed over with a scrubbing-brush. After which they must be rinsed through in several clean waters to remove all soap.

THE PLATEN MACHINE.

For job-printers the small platen machines are invaluable, being equal to them for speed, facility in making ready, ease in working, and for excellence in printing. Making ready on them needs no particular description, the method being the same as that already described for hand-press.

COLOUR PRINTING.

On this subject my remarks will of necessity be incomplete, so far as the whole subject of Printing in Colours is concerned; for full instructions as to the blending and manipulation of colours required in works of artistic merit could be furnished only by an artist. Nevertheless the great increase in colour work, and the rapidity with which it is extending, make it essential that the subject be treated in such a manner as to be of service to those who desire to keep pace with the times.

In the first place, to produce striking or pleasing results with colours, some knowledge of the laws that regulate their harmonious blending is necessary. It is well known that certain colours, when used in conjunction with others, not only heighten their effect, but by contrast make such colours seem more pure: for instance, a red line surrounded by green or with a green rule at top and bottom looks a brighter red than if it stood alone; and so with other colours. The following are complementary colours:

Orange is complementary to Blue.			
Yellow	"	"	Purple.
Green	"	"	Red.
Violet	"	"	Greenish-Yellow.
Magenta	"	"	Green.

With these colours the most brilliant results may be achieved; but if they are not judiciously blended, the brightness of one colour may be marred by its contrast with another. In order to guard against this it will be well to remember, when it is desired to have a particularly bright-looking poster, or other job, that

Blue and Yellow are better than Blue and Green			
Blue and Yellow	"	"	Green and Yellow
Yellow and Red	"	"	Yellow and Orange.
Yellow and Red	"	"	Orange and Red.
Blue and Red	"	"	Blue and Violet.
Blue and Red	"	"	Red and violet.

Colours may be multiplied by admixture; but this should not be attempted unless the colours are clean and good. Where certain tints or modifications of different colours are required, the proper method to obtain them is by mixing such proportions of colours as will produce the required tints; and if it is desirable that lighter shades of colour should be used, they may be obtained by adding flake white or white ink till the desired tint appears. To darken certain colours, a very small portion of black ink may be added; but if it be added in ever such small proportions to such colours as red, magenta, &c., the effect is to alter their colour and spoil them. The following colours and shades may be produced by intermixing:—

Carmine and Yellow	-	make	-	-	Vermilion.
Carmine, Yellow, and Black	"	-	-	-	Brown.
Carmine and Blue	-	-	"	-	Purple.
Blue and Black	-	-	"	-	Dark Blue.
Blue and Yellow	-	-	"	-	Green.
Black and Yellow	-	-	"	-	Bronze Green.
Blue, Black, and Yellow	-	-	"	-	Deep Green.

For working bills or other jobs in colours, the combinations that harmonise are—

Four Colours. Yellow, Blue, Red, and Black; Blue, Red, Green, and Lilac; Black, Green, Red, and Yellow; Scarlet, Dark Green, Lavender, and Black.

Three Colours. Red, Yellow, and Blue; Orange, Black, and Light Blue; Light Salmon, Dark Green, and Scarlet; Brown, Orange, and Purple; Dark Brown, Orange-Yellow, and Blue; Crimson Lake, Greenish-Yellow, and Black.

Two Colours. Red and Green; Orange and Violet; Light Blue and Deep Red; Yellow and Blue; Black and Salmon; Black and Light Green; Dark and Light Blue.

THE COLOURS.

RED.—*Carmine*: A brilliant and deep colour, but very expensive. *Crimson Lake*: Easily mixed, but not a deep colour. *Vermilion*: A bright red that will work well. *Rose Pink*, mixed with some lighter red, is suitable only for posters and other rough work.

BLUE.—*French or German Ultramarine* for good bright colours, works well, is cheap, and easily ground. *Prussian Blue*: Deep, and hard to grind. *Antwerp Blue*: Lighter, more easily ground, and works well. *Indigo*: Deep blue, but not bright, hard to grind.

GREEN.—*Brunswick Greens*, three shades, are cheap, and work well if properly ground. Green may also be produced by mixing Patent Yellow and Prussian Blue, or by mixing yellow and blue inks.

YELLOW.—*Yellow Ochre, Chrome, or Patent Yellow*, heightened by Orange Chrome.

BROWN.—Red and Black, or Orange and Black mixed.

To mix the colours, a muller and palette-knife are necessary; a fine-surfaced iron ink-slab being an excellent thing to grind them on. If possible, procure the colours in powder; or if that cannot be done, choose such as are easily ground. Take a little fine printer's varnish and lay it on the slab, and with the palette-knife mix in the colour until the ink is of the required consistency. See that the colour is thoroughly incorporated with the varnish, for upon this depends the quality of the work it will produce. If not properly mixed, scrape the ingredients together with the palette-knife, and grind them with the muller until every particle of colour is incorporated with the varnish.

It is best to procure the varnish from the printing-ink manufacturers; but it may be made by burning (or boiling) linseed oil and adding yellow resin. The boiling or burning should be done in the open air. On an emergency, Venice turpentine may be used instead of varnish; or for fine ink, Canadian balsam of the consistency of honey answers admirably.

Most coloured inks are liable to skin on the surface, some of them to a great extent; and this skinning causes much waste. With the best descriptions of ink, skinning may be prevented by covering them with a very thin layer of neatsfoot or olive oil; over the common inks I usually keep a half-inch or so of paraffin. Magenta, mauve, and other aniline colours, are subject to solidify to such an extent that nothing but re-grinding will make them work. When this takes place, they should be mixed with varnish, and ground up in the usual manner.

Paraffin is an excellent thing to use for thinning coloured for common work.

Printers mixing their own inks will find it best and economical to make only sufficient for the job in hand.

PRINTING IN COLOURS.

The forme having been divided, if thoroughly clean, may be made ready in the usual manner. If a poster, circular, or circular, the formes can be worked by "lay" only, points not being necessary. The sheets, however, must be laid with the greatest accuracy, and care taken that they do not move while the tympan is descending. But should the forme be very intricate so far as the registering of the various colours is concerned, it will be the safest plan to use points. The points used in printing the first of a series of colour-formes are different from those used for book-work. They are made of thin sheet-iron with spurs, which will stand, when the points are fixed on the forme, a little higher than the type, and are fixed on the furniture by small nails that are driven through holes made for the purpose. For a job to be worked in four colours, points with not less than three spurs must be used, so that there will be no occasion to use the same point-holes a second time. For a particularly fine job the points should be so placed that they may perforate the paper close to the edge of the margin, on one side of the forme, so that after the work is finished the perforated portion may be cut off, to remove the unsightly point-holes. As the first forme has been worked, the regular points, or plain points, must be used, fresh point-holes being taken for each colour. In this way an accurate registering of the colours may be secured; but, should the same point-holes be used for a second colour, any damage they may have received in working the first will endanger perfect register.

Generally speaking, colours are more difficult to work than black; it is therefore of the utmost importance, in printing in colours, that the forme should be thoroughly inked, and when extra colour is required it should be taken in as small quantities as is compatible with the job in hand, and distributed

properly. To do colour-work in a satisfactory manner, and with the least expenditure of time, it is advisable to have rollers cast on purpose and kept for colour-work only. They must be a little hard—as hard as those used for the finest black inks—and have a smooth, tacky surface. Black rollers cleaned for a coloured job only cause annoyance, especially if they are cracked on the surface, for, after being in use a short time, they are almost certain to exert an injurious influence on the colour.

Working colours on machine needs no further description than that which is contained in the article “Machine-work,” and what is given in this concerning the colours. The register of the finest descriptions of work is secured by using points; the first forme, as at press, carrying the spurs. For posters and general jobbing, however, careful “lay” on good machines is all that is requisite.

As soon as one colour has been worked, either on press or machine, scrape off all ink that has not been distributed, and put it back into its proper ink-tin. Oil and scrape rollers, as already described, and thoroughly clean the ink-slab. It is of the utmost importance that before commencing to print another colour the slab, rollers, and everything about the forme should be perfectly clean.

If red or any other ink has been used that is difficult to remove, it will be found best to roll the forme with the oily roller, by which means the ink is softened and can be more readily cleaned off.

At either press or machine, registering the colours is done in a manner similar to that of making register with any book-work or other forme.

GOLD PRINTING.

This description of printing can be done by using either gold leaf or bronze.

The usual method of printing in bronze is to take impressions with ordinary ink, and then apply the bronze with a piece of cotton-wool. Fine Magenta or other coloured ink which works clear is preferable to black, but black will answer the purpose. After the ink has had time to dry, with a clean rag or silk

pocket-handkerchief remove all superfluous dust. This description of printing is much improved in appearance if done on enamelled or highly-glazed paper or cards.

Printing in gold leaf requires much more care and skill than with bronze. Ink should be made with chrome yellow mixed with varnish, virgin wax, and Venice turpentine. Before taking impressions, cut the gold leaf in strips wider than the line or lines it is intended to cover. Having all prepared, ink the forme in the usual manner, and pull. The gold leaf is then laid on with a piece of cotton wool, and when sufficiently dry may be cleaned off in the same manner as bronze. If this description of printing or gilding is properly managed it will be found a great improvement on bronze printing.

DAMPING PAPER.

In many offices the practice of working paper dry has gained ground to a great extent within the last few years, on account of the hurry with which much of the work is wanted and executed not allowing sufficient time for damping. Notwithstanding the pressure of business, the improvement in the appearance of work printed on damped paper over that printed on dry makes it essential that, even under pressing circumstances, most descriptions of paper should be damped before being printed. I do not, however, advocate that all paper be damped: fine writing or other glazed papers would simply be spoilt by the process. And as most fine-surfaced papers *look best* when printed dry, of course some discretion must be exercised as to whether it is advisable to damp the paper given out for a job, or not. Most printing-papers—even the better class of paper suitable for fine book-work—will be improved for working purposes by being “wetted down.” But when stiff ink is to be used, the paper must not be made too damp, or it will be liable to “peel” and its surface remain on the type; care, therefore, must be taken that in wetting paper it is not overdone. I cannot give any rule to suit all classes of printing paper; some, being soft, require very little water others, being hard, will take more than double what is needed in

the case of the softer paper; and those of medium softness, through being of different qualities, must be treated each on its merits. In any case, I am not an advocate of over damping—I like the paper so that the dampness can be perceptibly felt, but not so as to make the paper feel too soft or pulpy. The workman can learn only by experience how to treat the different papers which must be damped before working.

The method of “wetting down” is most simple, and needs no lengthened explanation. The paper being usually folded in quires is taken by the fold in one hand and by the edge with the other; the edge of the quire is raised, and the back is plunged into the water, when the hand holding the edge allows it to slip, while the hand holding the back of the paper pulls it briskly under and out of the water; the edge is again taken hold of, and the quire laid on the damping-board. Should it require more than one dip to the quire, about half of the paper is opened out and laid flat, and the remainder of the quire is again taken up and treated as at first, then opened in the middle and laid flat. Each quire is treated in a similar manner until the whole is damped. It is usual when damping flat paper to take a quire or thereabouts, run it through the water, divide it in the centre, and turn so that the top wet sheet falls in the middle of each lot. Place a waste sheet and a wetting board on the heap. After allowing it to soak for an hour, heavy weights must be put on the top of all. Five or six hours after being damped down, the paper should be well turned, so as to allow all creases to press out before being used.

CASTING ROLLERS, &c.

It is not unusual, after trying every method to make a forme work properly without being rewarded with success, to exclaim, in disgust, “It is of no use trying to do good work without good rollers!” And, after having changed the roller, to ejaculate with pleasure, after the next pull, “What a difference a good roller makes!” Rollers truly are the most important implement, when

type and press are good, to secure first-class work ; such being the case, no pains and no reasonable expense ought to be spared to have good rollers always at hand, especially in country places, where it is impossible to send to the roller-makers for a supply.

My views on this subject may not be in accordance with the opinions of some printers ; but those who have had sufficient experience with rollers and roller-making will, I think, agree with me. I would advise that rollers of different degrees of elasticity and tackiness be cast, and always kept on hand ; for, on account of the sudden changes in temperature which often take place, it will be found that a roller which works well one day will not give satisfaction the next, although it may still be in good condition—it may be either too soft or too hard. It is therefore advisable to have others of a different quality to replace it. With spare rollers to choose from, a good quality of work may always be secured ; and rollers which may not be suitable for one job, or a certain temperature, will not be spoiled through the printer being compelled to use them under adverse circumstances.

I would recommend the following ingredients and proportions for hand-press rollers of different qualities, to suit any class of work and temperature :—

6 lbs. of glue to 6 lbs. of treacle for springy tacky rollers.

4 lbs. glue to 6 lbs. treacle for a nice medium roller for use with good ink in temperate weather.

3 lbs. glue to 6 lbs. treacle for cold weather.

3 lbs. glue to 7 lbs. treacle is suitable for frosty weather.

It will be found that the above proportions, if the following instructions are properly carried out, will make rollers that are suitable for any description of work.

To prepare glue for making rollers it must be soaked in water for four hours, if thick dark-looking glue be used—if fine light-coloured glue, three hours will be sufficient ; then drain the water off, and leave the vessel containing the glue covered till morning. Now put the glue into the melting-pot and allow it to melt thoroughly, then add the treacle, and boil gently for three-quarters of an hour, when, having previously oiled and slightly

warmed the mould, and fixed the stock, the composition may be poured in.

Before casting rollers it is a good plan to tie a page-cord or thicker twine round an inch or two of each end of the roller-stock, by which means the composition will be prevented being torn off. After casting, remove the superfluous compo. from the ends by encircling them with a piece of cord and pulling it till it cuts through. The rollers will be fit for work the day after casting; but great care must be taken when working a new roller that it does not "drag" off the stocks or "peel." If it displays any symptoms of either, or of being "too green"—a "too green" roller will not distribute properly and appears damp or greasy—hang it up for a day or two, under these circumstances, in a current of cool air, after smothering it with common ink.

From beginning to end the greatest care is required. The proportions of glue and treacle must be properly regulated. While boiling the ingredients, the water must be kept well round the vessel containing the composition; for, if allowed to fall below the level of the composition, in all probability the mass will be spoilt by the treacle "candyng." The pouring into the mould must be done slowly, or air-bubbles may spoil the rollers; and if boiled too little or too much, the composition will be rendered either too soft and tacky or too hard and suctionless. It will be well also to consider the temperature; a greater proportion of glue will be required in hot than in cold weather, and the reverse. But if rollers are kept made with the proportions recommended above, one or other of them will suit any temperature or weather.

For Machine-work the rollers should not be made any softer than the proportions of 3 lbs. glue to 6 lbs. treacle will make them, even in cold weather.

If made as here recommended, and they receive proper care and treatment, rollers will continue in good working order much longer than is generally supposed.

While speaking of roller-making, I may mention that during the Russian War I was engaged by one of our Government Printers to proceed to the Crimea as Printer to the Army. A complete small Printing office was provided; but the rollers seemed a knotty point—being so far from London, how could they be

renewed? The question being discussed, I suggested that I should be supplied with glue, treacle, and roller-mould, and promised I would cast our own. This was evidently thought strange, coming from a compositor. And I was asked, "How long can you make your own rollers last?" I answered, "Six months!" This was evidently considered impossible; for Mr. ——— observed, "*We cannot make a roller serve six weeks!*" If, however, the instructions here given are properly carried out, it will be found that hand-press rollers will keep good for at least the length of time I have mentioned, if the pressman has a variety, and is not compelled to use them for jobs for which they are not adapted.

I have already described the method of roller-cleaning which I consider best, under the headings *Press and Machine*; and although there are many methods advocated for preserving rollers, I will mention but one, which, without doubt, surpasses all others—that which I have seen adopted by London pressmen. When the roller is out of use it must be kept well smothered with common ink; and when again wanted, must simply be scraped. By this system, rollers will continue in good working order at least double the time they would do if regularly washed. It is recommended by many to keep rollers in a current of air. My experience in such matters has taught me that they keep much longer good if kept away from currents of air—under stairs, in dry cellars, or in cupboards.

RECASTING ROLLERS.

Rollers that need recasting should be thoroughly cleaned by washing. If, through long use, the surface has become hard, it must be removed by scraping, and the ends of the composition cut off. The composition may then be taken off the stocks, cut into pieces, and thrown into the pan. If it be doubtful whether the old compo. is good enough, it will be best to put a small

quantity into the pan to try if it will melt properly ; if it does not, soak the remainder for half-an-hour in water, and strain. If it is good it will now melt ; if bad, it will not, and is only fit to be thrown away. After the old composition is melted, treacle must be added in the proportion of about a pound to six or eight pounds of composition. After boiling and stirring well for twenty minutes it should be poured into the mould. All surplus composition should be poured out of the pan ; and when required for use it must be cut up by itself, new compo. or treacle being added as necessary.

WASHING FORMES.

After a forme has been worked off, it must be washed immediately. The duty of washing usually falls, in jobbing offices, on the person who has rolled for it, and in book offices upon the pressmen. In some large offices, however, the "washing" is done by the house, a person being appointed by the firm for that purpose. But, be the duty whose it may, the work should be done thoroughly : not the least ink or dirt must be left upon any part of the forme, chase, or furniture. After the whole has been well brushed over with ley, it must be rinsed, by dashing water over it, or by turning upon it a jet of water by means of a hose and rose.

If any forme has been allowed to remain unwashed until the ink has dried, it will be found best, before attempting to wash it, to roll it over with a roller well covered with common ink, and allow it to stand for an hour with the ink on it, when the forme may be cleaned properly ; or use a little paraffin when the ink cannot be removed by ordinary means.

Type must be kept clean or work will be disfigured.

HEBREW ALPHABET.

Character.	Name.	Power.	Numerical Value.
א	Aleph	<i>h</i> , unspirated	1
ב	Beth	<i>v</i> , as in van ; (ב) <i>b</i> , as in band	2
ג	Gimel	<i>g</i> , hard ; (ג) <i>gh</i>	3
ד	Daleth	<i>d</i> , as in door	4
ה	He	<i>h</i> , soft ; (ה) <i>h</i> , aspirated	5
ו	Vau	<i>v</i> or <i>w</i>	6
ז	Zain	<i>z</i> , as in zeal	7
ח	Cheth	<i>kh</i> , aspirated	8
ט	Teth	<i>t</i> , as in torn	9
י	Iod	<i>y</i> , as in young	10
כ	Caph	<i>k</i> or <i>c</i> , hard	20
ל	Lamed	<i>l</i> , as in law	30
מ	Mem	<i>m</i> , as in manner	40
נ	Nun	<i>n</i> , as in nothing	50
ס	Samech	<i>s</i> , as in sir	60
ע	Oin	<i>ng</i>	70
פ	Pe	<i>ph</i> , as in Philip ; (פ) <i>p</i> , as in pint	80
צ	Tzadde	<i>tz</i> , as in hawitzer	90
ק	Koph	<i>k</i> , as in lock	100
ר	Resh	<i>r</i> , as in road	200
ש	Shin	<i>sh</i> , as in shine	} 300
ס	Sin	<i>s</i> , as in sin	
ת	Tau	<i>th</i> , as in thin ; (ת) <i>t</i> , as in tin	400

BROAD LETTERS.

As Hebrew words are never divided, the following letters are cast broad to facilitate justification :—

ז	ה	ח	ל	ם	ת
<i>Aleph.</i>	<i>He.</i>	<i>Cheth.</i>	<i>Lamed.</i>	<i>Mem.</i>	<i>Tau.</i>

GREEK ALPHABET.

Characters.	Name.	Power.	Numerals.
A α	Alpha	<i>a</i>	1
B β	Beta	<i>b</i>	2
Γ γ	Gamma	<i>g</i>	3
Δ δ	Delta	<i>d</i>	4
Ε ε	Epsilon	<i>e</i> short	5
Ζ ζ	Zeta	<i>z</i>	7
Η η	Eta	<i>e</i> long	8
Θ θ	Theta	<i>th</i>	9
Ι ι	Iota	<i>i</i>	10
Κ κ	Kappa	<i>k</i> or <i>c</i>	20
Λ λ	Lambda	<i>l</i>	30
Μ μ	Mu	<i>m</i>	40
Ν ν	Nu	<i>n</i>	50
Ξ ξ	Xi	<i>x</i>	60
Ο ο	Omicron	<i>o</i> short	70
Π π	Pi	<i>p</i>	80
Ρ ρ	Rho	<i>r</i>	100
Σ σ	Sigma	<i>s</i>	200
Τ τ	Tau	<i>t</i>	300
Υ υ	Upsilon	<i>u</i>	400
Φ φ	Phi	<i>ph</i>	500
Χ χ	Chi	<i>ch</i>	600
Ψ ψ	Psi	<i>ps</i>	700
Ω ω	Omega	<i>o</i> long	800

ASPIRATES AND ACCENTS.

Lenis	-	-	'	Asper grave	-	ˆ
Asper	-	-	'	Circumflex	-	ˆ
Acute	-	-	'	Circumflex lenis	-	ˆ
Grave	-	-	'	Circumflex asper	-	ˆ
Lenis acute	-	-	ˆ	Diæresis	-	ˆ
Lenis grave	-	-	ˆ	Diæresis acute	-	ˆ
Asper acute	-	-	ˆ	Diæresis grave	-	ˆ

POINTS.

The comma, the period, and the exclamation in Greek are the same as in English; but the interrogation (;) is our semi-colon; and the colon is a point at the head of a letter; as, (ˆ)—nothing more than an inverted period.

A	B	Γ	Δ	E	Z	H	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	
Θ	Ι	Κ	Λ	Μ	Ν	Ξ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω					
Ο	Π	Ρ	Σ	Τ	Υ	Φ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω							
Χ	Ψ	Ω		α	β	γ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω									
		ς					δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω				
							δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω				
							δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω				
ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	τ	υ	φ	χ	ψ	ω

GREEK UPPER CASE.

α	ϵ	η	θ	ι	κ	λ	μ	ν	ω	Thin Spaces.		σ	τ	ψ	ϕ	β
β	ϵ	γ	δ	ι	κ	λ	μ	ν	ω	ϵ	η	σ	τ	ψ	ϕ	β
κ	ϵ	γ	δ	ι	κ	λ	μ	ν	ω	ϵ	η	σ	τ	ψ	ϕ	β
ξ	ζ	ν	τ	ρ	σ	τ	ψ	ϕ	β	ϵ	η	σ	τ	ψ	ϕ	β

GREEK LOWER CASE.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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HEBREW UPPER CASE.

TECHNICAL TERMS.

Author's proof.—The clean proof sent to an author after the compositors' errors have been corrected.

Blank.—A table to lay sheets on at press.

Bustard title.—A short title preceding the general title of a work

Bustard type.—Type with a face larger or smaller than its appropriate body: as Nonpareil on Minion body, or Minion on Nonpareil body.

Butter.—Types accidentally injured in a forme.

Beard of a letter.—The outer angle supporting the face of a type and extending to the shoulder.

Beurer.—A strip of reglet to bear off the impression from a blank page. A long piece of furniture, type-high, used in working jobs. A solid-faced type interspersed over the blank parts of a page in composing for stereotyping, to resist the force of the knife when the plates are shaved.

Bearer-lines.—The top line and bottom line in a page prepared for stereotyping.

Bevels.—Clumps cast nearly type-high, with a bevelled edge, used by stereotypers to form the flange on the side of the plates.

Bite.—An irregular white on the edge or corner of a printed page, caused by the frisket not being sufficiently cut out.

Blank page.—A page on which no matter appears.

Blocks.—The mahogany frames on which stereotype plates are affixed for printing.

Body.—The shank of the letter.

Botch.—A bungling, incompetent workman.

Bottle-arsed.—Type wider at the bottom than at the top.

Boxes.—The compartments of a case in which the types are placed.

Break.—The last line of any paragraph.

Broadside.—A forme of one page, printed on one side of a whole sheet of paper.

Cassie paper.—Damaged paper—the outside quires of a ream.

Casting off.—Estimating how many pages a certain quantity of copy will make in type.

Chapel.—The meetings held by the workmen for the purpose of redressing grievances, collecting fines, and disposing of their funds.

Clean proof.—When a proof has but few faults in it, it is called a clean proof; and when a proof is to be sent to the author, the pressmen are ordered to pull a clean proof.

Clearing away.—Properly disposing of materials after a work has been completed.

Close matter.—Solid matter with few break-lines.

Coffin.—The carriage of a machine.

Companionship.—All the hands on a work.

Composing.—Setting type.

Correct.—When the corrector reads the proof, or the compositor mends the faults marked in the proof, they are both said to correct; the corrector the proof, the compositor the forme.

Corrections.—The alterations or errors marked in a proof.

Cut-in letter.—A type of large size adjusted at the beginning of a line at the commencement of chapters.

Cut-in note.—A note justified into the side of a page.

Distributing.—Returning type to their various boxes after having been printed from. Spreading ink evenly over the surface of a roller.

Double.—Among compositors, a repetition of words: among pressmen, a sheet that is twice pulled and mackled.

Devil.—The errand-boy of a printing-office.

Draw.—When a forme is working at press, and any of the letters are loosely justified, or from any other cause are not tight in the forme, and the adhesion of the ink or rollers pulls them out, they are said to draw.

Dropping out.—After a forme is locked up, and, when it is being lifted from or being laid upon the imposing table, or the press, if any letters, spaces, or quadrats fall out, it is said something drops out, or something has dropped out.

Dressing a chase or forme.—Fitting the pages and chase with furniture and quoins.

Drive out.—To space widely.

Even lines.—When a piece of printing has to be executed in great haste, a number of compositors are employed on it, and the copy is cut into small pieces for each, to facilitate the making-up, imposing, and the general furthering of the work; if the copy should be in long paragraphs, the compositors have each to begin a line and to make their copy end a line, frequently with great irregularity of spacing. This is termed making even. In newspapers it is of constant occurrence.

Fat.—Poetry and leaded matter.

Fat face, or Fat letter.—Broad-stemmed letter.

Father.—The head or president of the chapel.

Fly.—The person that takes off the sheets from the press or machine.

Folio.—The figure or figures which stand at the head of the page; also, a sheet of paper once doubled.

Forme.—The pages when imposed in a chase.

Foul proof.—A proof with many faults marked in it.

Fount.—An assortment of type in definite proportions.

Friar.—A light patch in a printed sheet, caused by defective rolling.

Fudge.—To contrive without proper materials.

Full press.—When two men work at the press together.

Furniture.—Strips of wood or metal placed around and between pages when imposed.

Gauge.—A strip of reglet with a notch in it, passed with the making-up, to denote the length of the pages.

Get in.—To set close.

Grassing.—A compositor taking occasional work.

Gutter-sticks.—Furniture used in imposition to separate the pages.

Half press.—When but one person works at the press.

Half-title.—The title of a book inserted in the upper portion of the first page of matter.

Hell receptacle.—The receptacle for broken or battered letters; the old metal box; the shoe.

Headline.—The top line of a page containing the running title and folio. When there is no running title the folio is styled the head-line. Chapter lines are head-lines, as are also the titles of articles in periodicals and newspapers.

High line.—Term applied to a type that ranges above the rest in a line.

High (or low) to paper.—Applied to a type cast higher or lower than the rest of the fount.

Horse.—The stage on the bank on which pressman set the heap of paper.

Horsing.—Charging for work before it is executed.

Imposing.—Arranging and locking up a forme of type in a chase.

Imprint.—The name of the printer or of the publisher appended to jobs or title-pages.

Inferior letters.—Small letters cast near the bottom of the type.

Inset.—Same as offcut.

Jeff.—To throw for a choice with quadrats instead of dice.

Justifying.—Spacing out lines accurately.

Keep in.—To crowd in by thin spacing.

Keep out.—To drive out or expand matter by wide spacing.

Kerned letter.—Type of which a part of the face hangs over the body.

Laying cases.—Filling cases with a fount of new type.

Laying pages.—Placing pages on the stone in a proper order for imposition.

Lean.—Close and solid matter.

Lean face.—Light, thin type.

Letter hangs.—When the page is out of square.

Locking up.—Tightening up a forme by means of quoins.

Longcross.—The bar that divides a chase the longest way.

Long pull.—When the bar is brought close to the cheek of the press.

Low case.—When the compositor has set almost all the letters out of his case.

Low line.—Applied to a type that ranges lower than the rest in a line.

Making-up.—To arrange the lines of matter into pages.

Making margin.—In imposition, arranging the space between the pages of a forme so that the margin will be properly proportioned.

Making ready.—Preparing a forme on the press for printing.

Measure.—The width of a page.

Monk.—A black spot in a printed sheet, owing to the ink not being properly distributed.

Naked forme.—A forme without furniture.

Off.—Signifies that the pressman has worked off the forme.

Offcut.—A portion of a sheet that is cut off before folding.

Open matter.—Matter widely leaded or containing numerous break-lines.

Off its feet.—When matter does not stand upright.

Out.—An omission marked in a proof by the reader.

Out of register.—When the pages do not back each other.

Overlay.—A scrap of paper pasted on the tympan-sheet to bring up the impression.

Overrunning.—Carrying words backward or forward in correcting.

Passing the making-up.—Passing to the next hand in order the lines remaining (if any) after a compositor has made up his matter, together with the gauge and proper folio.

Perfecting.—Printing the second forme of a sheet.

Pie.—Type promiscuously intermingled.

Pick.—A particle of ink or paper imbedded in the hollow of a letter, filling up its face and occasioning a spot.

Pigs.—An ancient nickname given in derision by compositors to pressmen. The press-room was called a pig-sty.

Planing down.—To bring down types evenly on their feet, by laying a planer on the page and striking it firmly with a mallet.

Point-holes.—Fine holes made by the points to register the second impression by.

Press proof.—The last proof read and corrected previous to working-off.

Ratting.—Working at less than the established prices.

Register sheet.—The sheet used to make register.

- Register.**—To cause the pages in a sheet to print precisely back to back.
- Revise.**—The last proof of a forme before working it off.
- Riding.**—Type at the end of a line catching against a lead, or the ends of leads overlapping each other.
- Rounce.**—The handle for running in and out the carriage of a hand-press.
- Runs on sorts.**—Requiring an inordinate proportion of particular letters.
- Set off.**—When sheets that are newly worked off soil those that come in contact with them, they are said to set off.
- Set-off Sheet.**—A sheet of paper pasted on the tympan sheet, when perfecting, to prevent the second side being soiled by the set-off.
- Sheeting.**—Taking ink off rollers by rolling them on clean sheets of paper.
- Shank.**—The square metal upon which the face of a letter stands.
- Signature.**—A letter or a figure used at the bottom of the first page of a sheet, to direct the binder in placing the sheets in a volume.
- Slur.**—A blurred impression in a printed sheet.
- Sorts.**—The letters in the several case-boxes are separately called sorts, in printers' and founders' language.
- Squabble.**—A page or forme is squabbled when the letters are twisted out of a square position.
- Shoulder.**—The upper surface of the shank of a type not covered by the letter.
- Stand.**—The frame on which the cases are placed.
- Stem.**—The straight flat strokes of a straight letter.
- Stet.**—Written opposite to a word, to signify that the word erroneously struck out in a proof shall remain.
- Sub.**—A compositor occasionally employed on a daily paper, to fill the place of an absentee.
- Superior letters.**—Letters of a small face, cast by the founder near the top of the type.
- Table-work.**—Matter consisting partly of rules and figures.
- Take, or Taking.**—A given portion of copy.
- Token.**—Two hundred and fifty sheets.
- Turn for a letter.**—When a sort runs short, a letter of the same thickness is substituted, placed bottom upward.
- Underlay.**—A piece of paper or card placed under types or cuts to improve the impression.
- Wayz-goose.**—A term given to the annual dinner customary among printers during the summer months.
- White line.**—A line of quadrats.
- White page.**—A blank page.
- White paper.**—Until the second side of a sheet is printed, pressmen call the heap white paper.
- Working in pocket.**—When the hands share equally their earnings on a work.

COMPOSITORS' WAGES IN LONDON,

ADVANCES FROM 1785.

No regular scale of prices for composition having been printed till 1785, the following list of advances in compositors' wages is commenced from that date.

Nov. 20, 1785, piece-work prices were advanced from fourpence to fourpence-halfpenny per thousand ems, including english and brevier. In leaded matter the em or en at the beginning and end of the line was not to count in the width.*

Feb. 14, 1798, the compositors claimed, (1) "That all works be cast up with the heads and directions inclusive;" and (2) "That em and en quadrats, or whatever is used at the ends of lines, be included in the width;" which was granted. The advance to commence at Lady-day, but not to extend to works that had commenced but were not finished before that time.

Dec. 18, 1795, at a meeting of master printers, held at the Globe Tavern, to consider certain propositions submitted to them by the compositors, it was resolved, "That all works printed in larger type than english shall be cast up wholly as english."

Dec. 24, 1800, the master printers met to consider a demand from the compositors for an additional halfpenny per thousand on manuscript. The advance was not conceded, the meeting being of opinion "That to make any distinction between manuscript and reprint would be an unjustifiable departure from the established and long-approved principles by which work has been

* It appears to have been the practice, in all leaded matter, to indent an em or en at the beginning and end of the line, to prevent commas or other thin types from slipping.

regulated." Taking into consideration, however, the pressure of the times (bread alone being 1s. 7½d. per quartern), a farthing extra per thousand was granted without distinction on both reprint and manuscript. To come into operation January 1, 1801.

April 16, 1801. At a meeting of master printers, held at Stationers' Hall, it was agreed that "All works in the English language, common matter, with space lines, including english and brevier, be cast up at fivepence three farthings per thousand; without space lines sixpence per thousand," being an advance of three farthings on the Scale of 1805; reprint and manuscript to be paid the same price.

Jan. 16, 1816. At a meeting of master printers held at the Globe Tavern, reprint was reduced three farthings per thousand; the price agreed to being fivepence farthing per thousand.

Up to 1866, the recognised working hours were from 8 a.m. to 8 p.m. *every working day*.

Nov. 21, 1866. At a meeting of the committee of master printers and compositors, held at the Freemasons' Tavern, it was agreed "That a rise of one halfpenny per thousand on all descriptions of work (excepting newspapers), whether manuscript or reprint, be paid," and "That the established wages be 36s. per week of sixty hours."

After this time the piece-work prices, established wages, and number of hours worked were undisturbed till 1872, when the hours were reduced to 54, the established wages remaining at 36s. To secure the piece-hand from loss by the reduction in the hours, an advance of one halfpenny per thousand was granted.

The following is an abstract of the Scale as raised by the Settlement of 1872.

ABSTRACT.

MANUSCRIPT.											
		COMMON.	FOREIGN.	Dictionaries.			Gram'ars, &c.			Greek.	
				English.	English & Foreign.	Foreign.	English.	English & Foreign.	Foreign.	Without Accents.	With Accents.
ENGLISH TO BREVIER	<i>lead</i>	6 $\frac{3}{4}$	7 $\frac{1}{4}$	7 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{3}{4}$	7	7 $\frac{1}{4}$	7 $\frac{1}{2}$	9 $\frac{1}{4}$	11
	<i>solid</i>	7	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{3}{4}$	8	7 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{3}{4}$	9 $\frac{1}{2}$	11 $\frac{1}{4}$
MINION...	<i>lead</i>	7	7 $\frac{3}{4}$	7 $\frac{1}{2}$	7 $\frac{3}{4}$	8 $\frac{1}{4}$	7 $\frac{1}{4}$	7 $\frac{1}{2}$	8		
	<i>solid</i>	7 $\frac{1}{4}$	8	7 $\frac{3}{4}$	8	8 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{3}{4}$	8 $\frac{1}{4}$		
NONPAR'L	<i>lead</i>	7 $\frac{3}{4}$	8 $\frac{1}{2}$	8 $\frac{1}{4}$	8 $\frac{1}{2}$	9	8	8 $\frac{1}{4}$	8 $\frac{3}{4}$		
	<i>solid</i>	8	8 $\frac{3}{4}$	8 $\frac{1}{2}$	8 $\frac{3}{4}$	9 $\frac{1}{4}$	8 $\frac{1}{4}$	8 $\frac{1}{2}$	9		
RUBY.....	<i>lead</i>	8 $\frac{1}{4}$	9	8 $\frac{3}{4}$	9	9 $\frac{1}{4}$	8 $\frac{1}{2}$	8 $\frac{3}{4}$	9 $\frac{1}{4}$		
	<i>solid</i>	8 $\frac{1}{2}$	9 $\frac{1}{4}$	9	9 $\frac{1}{4}$	9 $\frac{1}{2}$	8 $\frac{3}{4}$	9	9 $\frac{1}{2}$		
PEARL.....	<i>lead</i>	8 $\frac{3}{4}$	9 $\frac{1}{2}$	9 $\frac{1}{4}$	9 $\frac{1}{2}$	10	9	9 $\frac{1}{4}$	9 $\frac{3}{4}$		
	<i>solid</i>	9	9 $\frac{1}{4}$	9 $\frac{1}{2}$	9 $\frac{3}{4}$	10 $\frac{1}{4}$	9 $\frac{1}{4}$	9 $\frac{1}{2}$	10		
DIAMOND..	<i>lead</i>	10 $\frac{3}{4}$	11 $\frac{1}{2}$	11 $\frac{1}{4}$	11 $\frac{1}{2}$	12	11	11 $\frac{1}{4}$	11 $\frac{3}{4}$		
	<i>solid</i>	11	11 $\frac{3}{4}$	11 $\frac{1}{2}$	11 $\frac{3}{4}$	12 $\frac{1}{4}$	11 $\frac{1}{4}$	11 $\frac{1}{2}$	12		
REPRINT.											
ENGLISH TO BREVIER	<i>lead</i>	6	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{3}{4}$	7	6 $\frac{1}{4}$	6 $\frac{1}{2}$	6 $\frac{3}{4}$	8 $\frac{3}{4}$	10 $\frac{1}{4}$
	<i>solid</i>	6 $\frac{1}{4}$	6 $\frac{3}{4}$	6 $\frac{1}{2}$	7	7 $\frac{1}{4}$	6 $\frac{1}{2}$	6 $\frac{3}{4}$	7	9	10 $\frac{1}{2}$
MINION...	<i>lead</i>	6 $\frac{1}{4}$	7	6 $\frac{1}{2}$	7	7 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{3}{4}$	7 $\frac{1}{4}$		
	<i>solid</i>	6 $\frac{1}{2}$	7 $\frac{1}{4}$	7	7 $\frac{1}{4}$	7 $\frac{3}{4}$	6 $\frac{3}{4}$	7	7 $\frac{1}{2}$		
NONPAR'L	<i>lead</i>	7	7 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{3}{4}$	8 $\frac{1}{4}$	7 $\frac{1}{4}$	7 $\frac{1}{2}$	8		
	<i>solid</i>	7 $\frac{1}{4}$	8	7 $\frac{3}{4}$	8	8 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{3}{4}$	8 $\frac{1}{4}$		
RUBY.....	<i>lead</i>	7 $\frac{1}{2}$	8 $\frac{1}{4}$	8	8 $\frac{1}{4}$	8 $\frac{1}{2}$	7 $\frac{3}{4}$	8	8 $\frac{1}{2}$		
	<i>solid</i>	7 $\frac{3}{4}$	8 $\frac{1}{2}$	8 $\frac{1}{4}$	8 $\frac{1}{2}$	9	8	8 $\frac{1}{4}$	8 $\frac{1}{2}$		
PEARL.....	<i>lead</i>	8	8 $\frac{1}{4}$	8 $\frac{1}{2}$	8 $\frac{3}{4}$	9 $\frac{1}{4}$	8 $\frac{1}{4}$	8 $\frac{1}{2}$	9		
	<i>solid</i>	8 $\frac{1}{4}$	9	8 $\frac{3}{4}$	9	9 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{3}{4}$	9 $\frac{1}{4}$		
DIAMOND..	<i>lead</i>	10	10 $\frac{3}{4}$	10 $\frac{1}{2}$	10 $\frac{3}{4}$	11 $\frac{1}{4}$	10 $\frac{1}{4}$	10 $\frac{1}{2}$	11		
	<i>solid</i>	10 $\frac{1}{4}$	11	10 $\frac{3}{4}$	11	11 $\frac{1}{2}$	10 $\frac{1}{2}$	10 $\frac{3}{4}$	11 $\frac{1}{4}$		

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NUMERALS,

Numbers expressed by letters; either roman or italic caps or lower case are used, thus—Vol. I. chap. xvii. The numerals are—

I	i	.....	1	C	c	.....	100
V	v	.....	5	D	d	.....	500
X	x	.....	10	M	m	.....	1000
L	l	.....	50				

The manner of expressing numbers by numerals is by either taking from a higher or adding to a lower numeral, thus—

IV	iv	.....	4	LX	lx	.....	60
VI	vi	.....	6	XC	xc	.....	90
IX	ix	.....	9	CX	cx	.....	110
XI	xi	.....	11	CD	cd	.....	400
XIV	xiv	.....	14	DC	dc	.....	600
XVI	xvi	.....	16	CM	cm	.....	900
XX	xx	.....	20	MC	mc	.....	1100
XL	xl	.....	40	MD	md	.....	1500

PROVINCIAL RATES OF WAGES.

*Established Wages (Jobbing), Piece Work Prices, and
Number of Hours Worked.*

	'stab.	piece	hrs.		'stab.	piece	hrs.
Aylesbury	26	...	58	Kendal	25	5½	58
Ayr	24	...	54	Lancaster	26	5½	56
Banbury	24/6	6	55	Leeds	32	6½	54
Barnsley	28	6	56	Leicester.....	28	6	56
Bath	27	6½	54	Lewes	29	6½	60
Birmingham	30	7½	54	Londonderry	27	5½	59
Blackburn	28	6	54	Liverpool	34	8½	54
Bolton	31/6	6½	55½	Manchester	35	7½	55
Bradford.....	30	6½	55	Macclesfield	28	6	58
Bristol	28	6½	54	Middlesbrough ...	30	6½	54
Brighton	29	...	60	Merthyr	28	...	57
Burnley	26	6	54	Newcastle	32	6½	54
Cambridge(Town)	27	5	...	Newport	24	6	58
Cambridge(Univ.)	36	...	...	Northampton.....	29	6½	54
Cardiff	27	6½	54	Norwich	26	5½	54
Carlisle	24	5	54	Nottingham	27	...	54
Carmarthen	25	5½	54	Oldham	32	6½	54
Cheltenham	26	...	56	Oswestry	27/6	5½	54
Chester	28/6	6½	54	Oxford (Town) ...	36	6	55
Chesterfield	26	6	56	Oxford (Univ.) ...	36	...	...
Clonmel	20	...	60	Penrith	25	...	56
Coleford	25	...	56	Potteries.....	28	7	54
Darlington ..	28	6	53	Preston	30	6½	54
Derby	28	6½	54	Reading	24	6	59
Devizes	24	...	57	Rochdale	30	6	54
Dewsbury	26	...	56	Rugby	25	...	59
Doncaster	26	5½	57	Salisbury	30	6	56
Dublin	33	6½	57	Scarborough	26	...	54
Dumbarton	27	...	51	Sheffield	31	6½	54
Drogheda	24	...	60	Shrewsbury	26	...	56
Durham	26	5½	54	Stafford	32	5½	54
Edinburgh	30	...	54	Stockton.....	26	...	54
Exeter	20	...	60	Sunderland.....	32	6½	54
Glasgow	30	...	54	Ulverston	24	6	59
Greenock	30	5½	54	Warrington	25	...	59
Guildford	30	6½	54	Warwick & Leamg.	25	6½	54
Halifax	30	6½	54	Whitehaven	25	5	57
Hartlepool	26	6	54	Wigan	29	6	55
Hereford	24	6	56	Wolverhampton...	27	6½	54
Hertford	28	...	58	Worcester... ..	27	...	55
Huddersfield	30	6½	54	Wrexham	26	5½	54
Hull	28	5½	58½	York	28	5½	54

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	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	qra.	sh.	
50	1	1	0	17	0	13	0	9	0	7	0	6	0	5	0	4	0	4	0	3	0	3	0	3	0	2	0	2	0	2	
100	2	2	1	10	1	1	0	17	0	13	0	12	0	9	0	7	0	7	0	6	0	5	0	5	0	4	0	3	0	3	
200	4	4	2	19	2	2	1	10	1	1	0	23	0	17	0	14	0	13	0	12	0	10	0	9	0	7	0	6	0	6	
250	5	5	3	12	2	15	1	18	1	8	1	4	0	21	0	17	0	16	0	14	0	13	0	11	0	8	0	7	0	6	
300	6	6	4	4	3	8	2	2	1	14	1	10	1	1	0	20	0	19	0	17	0	15	0	13	0	10	0	9	0	7	
400	8	8	5	14	4	4	2	19	2	2	1	21	1	10	1	3	1	1	0	23	0	20	0	17	0	13	0	12	0	9	
500	10	10	6	23	5	5	3	12	2	15	2	18	1	18	1	10	1	8	1	4	1	1	0	21	0	16	0	14	0	11	
600	12	12	8	8	6	6	4	4	3	8	2	19	2	2	1	16	1	14	1	10	1	6	1	1	0	19	0	17	0	13	
700	14	14	9	18	7	7	4	21	3	16	3	6	2	11	1	23	1	20	1	15	1	11	1	6	0	22	0	20	0	15	
750	15	15	10	10	7	20	5	5	3	22	3	12	2	15	2	3	1	23	1	18	1	14	1	8	1	0	21	0	16	0	16
800	16	16	11	3	8	8	5	14	4	4	3	17	2	19	2	6	2	2	1	21	1	16	1	10	1	1	0	23	0	17	
900	18	18	12	12	9	9	6	6	4	17	4	4	3	3	2	12	2	9	2	2	2	1	21	1	14	1	5	1	1	0	19
1000	20	20	13	22	10	10	6	23	5	5	4	16	3	12	2	19	2	15	2	8	2	2	1	18	1	8	1	4	0	21	
1250	26	1	17	9	13	1	8	17	6	13	5	19	4	9	3	12	3	7	2	22	2	15	2	5	1	16	1	11	1	3	
1500	31	6	20	20	15	15	10	10	7	20	6	23	5	5	4	5	3	22	3	12	3	16	3	1	2	8	2	1	1	18	
1750	36	11	24	8	18	6	12	4	9	3	8	3	6	2	4	22	4	14	4	16	4	4	3	16	3	1	2	8	2	1	18
2000	41	16	27	19	20	20	13	22	10	10	9	7	6	23	5	14	5	5	4	16	4	4	3	12	2	15	2	8	1	18	
2500	52	2	34	18	26	1	17	10	13	1	11	15	8	17	7	0	6	13	5	20	5	5	4	9	3	7	2	22	2	5	
3000	62	12	41	16	31	6	20	20	15	15	13	22	10	10	8	8	7	20	6	23	6	6	5	5	3	22	3	12	2	15	
4000	83	8	55	14	41	16	27	19	20	20	18	13	13	22	11	3	10	10	9	7	8	8	6	23	5	5	4	16	3	12	
5000	104	4	69	11	52	2	34	18	26	1	23	4	17	9	13	22	13	11	14	10	10	8	17	6	13	5	19	4	9		
10000	208	8	188	22	104	4	69	11	52	2	46	8	34	18	27	19	26	1	23	4	20	20	17	9	18	1	11	14	8	17	

TABLE TO CALCULATE THE COST OF PAPER.

Ream.		Half ream.		Five quires.		One quire.		Half quire.		Six sheets.		Ream.		Half ream.		Five quires.		One quire.		Half quire.		Six sheets.	
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
2	6	1	3	0	7	1	1	0	1	1	1	12	11	6	5	3	2	7	3	..	..	..	..
4	0	2	0	1	0	2	1	1	1	1	1	13	4	6	8	3	4	8	4	4	2	..	..
4	6	2	3	1	1	2	3	1	1	1	1	13	9	6	10	3	5	8	1	..	..	..	..
5	0	2	6	1	3	3	1	1	0	3	4	14	2	7	1	3	6	8	4	4	1	..	..
5	10	2	11	1	5	3	3	1	1	1	1	14	7	7	3	3	7	8	4	..	..	..	..
6	3	3	1	1	6	3	3	2	1	1	1	15	0	7	6	3	9	9	4	2	1	..	..
6	8	3	4	1	8	4	4	2	1	1	1	15	5	7	8	3	10	9	1	..	..	..	..
7	13	6	1	1	9	4	4	..	..	..	..	15	10	7	11	3	11	9	4	..	..	..	..
7	6	3	9	1	10	4	4	2	1	1	1	16	3	8	1	4	0	9	4	..	..	..	..
7	11	3	11	1	11	4	4	..	..	..	..	16	8	8	4	4	2	10	5	2	1	..	..
8	4	4	2	2	1	5	2	1	1	1	1	17	1	8	6	4	3	10	1	..	..	..	..
8	9	4	4	2	2	4	5	1	..	..	..	17	6	8	9	4	4	10	5	1	..	..	..
9	2	4	7	2	3	5	2	2	1	1	1	17	11	8	11	4	5	10	3	..	..	..	..
9	7	4	9	2	4	5	3	..	..	..	..	18	4	9	2	4	7	11	5	2	1	..	..
10	0	5	0	2	6	6	3	1	1	1	1	18	9	9	4	4	8	11	1	..	..	..	..
10	10	5	5	2	8	6	3	1	1	1	1	19	2	9	7	4	9	11	4	5	1	..	..
11	3	5	7	2	9	6	3	..	..	..	..	19	7	9	9	4	10	11	3	..	..	..	..
10	5	5	2	2	7	6	4	..	..	..	..	20	0	10	0	5	0	12	6	3	..	..	..
11	8	5	10	2	11	7	3	1	1	1	1	21	8	10	10	5	5	13	6	3	1	..	..
12	1	6	0	3	0	1	7	1	1	1	1	30	0	15	0	7	6	18	9	4	1	..	..
12	6	6	3	3	1	7	3	1	1	1	1	33	4	16	8	8	4	20	10	5	..	..	..

RELATIVE SIZES OF TYPE.

Dble. Pica = 2-line Small Pica.	Small Pica = 2-line Ruby.
Paragon = „ L. Primer.	L. Primer = „ Pearl.
Gt. Primer = „ Bourgeois.	Bourgeois = „ Diamond.
English = „ Minion.	Brevier = „ Minikin.
Pica = „ Nonpareil.	

4½ ems of Gt. Primer = 1 inch.	8½ ems of L. Primer = 1 inch.
5½ „ English = „	9½ „ Brevier = „
6 „ Pica = „	12 „ Nonpareil = „
7 „ Small Pica = „	17½ „ Diamond = „

LEADS REQUIRED TO JUSTIFY A LINE OF ANY GIVEN BODY OF TYPE.

Pearl.....	One four and one eight-to-pica.
Ruby	One four and one six-to-pica.
Nonpareil.....	Two fours; three sixes; or four eights.
Emerald	One four, one six, and one eight.
Minion	One four and two sixes.
Brevier.....	Two fours and one six.
Bourgeois	Three eights and two sixes.
Long Primer	Three fours; or six eights.
Small Pica	Two fours and two sixes.
Pica	Four fours; or six sixes.
English	Three fours and two sixes.

This Table shows what number of ems of any other fount will correspond in depth of body with any given number of Pica ems, from 10 ems Pica to 30.

Pica.	Small Pica.	Long Primr.	Bourg	Brev.	Min.	Nonp.	Ruby.	Pearl.	Pica.
10	11½	12½	14	15½	17	20	23	25	10
11	12½	14	15½	17	18½	22	25½	28	11
12	14	15	17	18½	20½	24	27½	30	12
13	15	16½	18½	20	22	26	30	33	13
14	16	17½	20	21½	23½	28	32½	35	14
15	17½	19	21½	23	25½	30	34½	38	15
16	18½	20	23	25	27	32	37	40	16
17	19½	21½	24	26½	28½	34	39½	43	17
18	21	22½	25½	28	30½	36	41½	45	18
19	22	24	27	29½	32	38	44	48	19
20	23	25	28½	31	34	40	46	50	20
21	24	26½	30	32½	35½	42	48½	53	21
22	25½	27½	31½	34	37	44	51	55	22
23	26½	29	32½	35½	39	46	53	58	23
24	27½	30	34	37	40½	48	55½	60	24
25	29	31½	35½	38½	42	50	58	63	25
26	30	32½	37	40	44	52	60	65	26
27	31	34	38½	42	45½	54	62½	68	27
28	32½	35	40	43½	47½	56	65	70	28
29	33½	36½	41	45	49	58	67	73	29
30	34½	38	42½	46½	50½	60	69½	75	30

SIZES OF PAPER.

The following Table gives the dimensions in inches of the various sizes of paper, and the different divisions into which the respective sheets may be cut:—

DOUBLE SUPER ROYAL.				DEMY.			
Broadside	...	...	40 by 27½	Broadside	...	...	22½ by 17½
Long Folio	...	...	40 " 13½	Long Folio	...	...	22½ " 8½
DOUBLE ROYAL.				Long Thirds	...	...	22½ " 5½
Broadside	...	...	40 by 25	Broad Folio	...	...	17½ " 11½
Long Folio	...	...	40 " 12½	Broad Thirds	...	...	17½ " 7½
DOUBLE DEMY.				Broad Quarto	...	...	17½ " 5½
Broadside	...	...	35½ by 22½	Quarto (Common)	...	...	11½ " 8½
Long Folio	...	...	35½ " 11½	Octavo (Common)	...	...	8½ " 5½
DOUBLE LARGE POST.				LARGE POST.			
Broadside	...	...	33 by 21	Broadside	...	...	21 by 16½
Long Folio	...	...	33 " 10½	Long Folio	...	...	21 " 8½
DOUBLE CROWN.				Long Thirds	...	...	21 " 5½
Broadside	...	...	30 by 20	Broad Folio	...	...	16½ " 10½
Long Folio	...	...	30 " 10	Broad Thirds	...	...	16½ " 7
DOUBLE POST.				Broad Quarto	...	...	16½ " 5½
Broadside	...	...	31 by 19	Quarto (Common)	...	...	10½ " 8½
Long Folio	...	...	31 " 9½	Octavo (Common)	...	...	8½ " 5½
DOUBLE FOOLSCAP.				CROWN.			
Broadside	...	...	27 by 17	Broadside	...	...	20 by 15
Long Folio	...	...	27 " 8½	Long Folio	...	...	20 " 7½
IMPERIAL.				Long Thirds	...	...	20 " 5
Broadside	...	...	30 by 22½	Broad Folio	...	...	15 " 10
Long Folio	...	...	30 " 11½	Broad Thirds	...	...	15 " 6½
SUPER ROYAL.				Broad Quarto	...	...	15 " 5
Broadside	...	...	27½ by 20	Quarto (Common)	...	...	10 " 7½
Long Folio	...	...	27½ " 10	Octavo (Common)	...	...	7½ " 5
ROYAL.				POST.			
Broadside	...	...	25 by 20	Broadside	...	...	19 by 15½
Long Folio	...	...	25 " 10	Long Folio	...	...	19 " 7½
Long Thirds	...	...	25 " 6½	Long Thirds	...	...	19 " 5½
Broad Folio	...	...	20 " 12½	Broad Folio	...	...	15½ " 9½
Broad Thirds	...	...	20 " 8½	Broad Thirds	...	...	15½ " 6½
Broad Quarto	...	...	20 " 6½	Broad Quarto	...	...	15½ " 4½
Quarto (Common)	...	...	12½ " 10	Quarto (Common)	...	...	9½ " 7½
Octavo (Common)	...	...	10 " 6½	Octavo (Common)	...	...	7½ " 4½
MEDIUM.				FOOLSCAP.			
Broadside	...	...	24 by 19	Broadside	...	...	17 " 13½
Long Folio	...	...	24 " 9½	Long Folio	...	...	17 " 6½
Long Thirds	...	...	24 " 6½	Long Thirds	...	...	17 " 4½
Broad Folio	...	...	19 " 12	Broad Folio	...	...	13½ " 8½
Broad Thirds	...	...	19 " 8	Broad Thirds	...	...	13½ " 5½
Broad Quarto	...	...	19 " 6	Broad Quarto	...	...	13½ " 4½
Quarto (Common)	...	...	12 " 9½	Quarto (Common)	...	...	8½ " 6½
Octavo (Common)	...	...	9½ " 6	Octavo (Common)	...	...	6½ " 4½
				POTT.			
				Broadside	...	...	15½ by 12½
				Long Folio	...	...	15½ " 6½

THIS TABLE shows, in the first column, the number of Hours in a number of lines of composition, from 20 to 1150; the figures at head the number of lines in the Hour.

EXAMPLE:—If 930 lines have been composed, containing 19 line hour, look for the figures 19 at the top of the table, and carry the e till it meets with the nearest number, as, 931: in a line with that in the first column are the figures 49, the number of hours, and one l

1	10	11	12	13	14	15	16	17	18	19	20	21	2
2	20	22	24	26	28	30	32	34	36	38	40	42	4
3	30	33	36	39	42	45	48	51	54	57	60	63	5
4	40	44	48	52	56	60	64	68	72	76	80	84	6
5	50	55	60	65	70	75	80	85	90	95	100	105	7
6	60	66	72	78	84	90	96	102	108	114	120	126	8
7	70	77	84	91	98	105	112	119	126	133	140	147	9
8	80	88	96	104	112	120	128	136	144	152	160	168	10
9	90	99	108	117	126	135	144	153	162	171	180	189	11
10	100	110	120	130	140	150	160	170	180	190	200	210	12
11	110	121	132	143	154	165	176	187	198	209	220	231	13
12	120	132	144	156	168	180	192	204	216	228	240	252	14
13	130	143	156	169	182	195	208	221	234	247	260	273	15
14	140	154	168	182	196	210	224	238	252	266	280	294	16
15	150	165	180	195	210	225	240	255	270	285	300	315	17
16	160	176	192	208	224	240	256	272	288	304	320	336	18
17	170	187	204	221	238	255	272	289	306	323	340	357	19
18	180	198	216	234	252	270	288	306	324	342	360	378	20
19	190	209	228	247	266	285	304	323	342	361	380	399	21
20	200	220	240	260	280	300	320	340	360	380	400	420	22
21	210	231	252	273	294	315	336	357	378	399	420	441	23
22	220	242	264	286	308	330	352	374	396	418	440	462	24
23	230	253	276	299	322	345	368	391	414	437	460	483	25
24	240	264	288	312	336	360	384	408	432	456	480	504	26
25	250	275	300	325	350	375	400	425	450	475	500	525	27
26	260	286	312	338	364	390	416	442	468	494	520	546	28
27	270	297	324	351	378	405	432	459	486	513	540	567	29
28	280	308	336	364	392	420	448	476	504	532	560	588	30
29	290	319	348	377	406	435	464	493	522	551	580	609	31
30	300	330	360	390	420	450	480	510	540	570	600	630	32
31	310	341	372	403	434	465	496	527	558	589	620	651	33
32	320	352	384	416	448	480	512	544	576	608	640	672	34
33	330	363	396	429	462	495	528	561	594	627	660	693	35
34	340	374	408	442	476	510	544	578	612	646	680	714	36
35	350	385	420	455	490	525	560	595	630	665	700	735	37
36	360	396	432	468	504	540	576	612	648	684	720	756	38
37	370	407	444	481	518	555	592	629	666	703	740	777	39
38	380	418	456	494	532	570	608	646	684	722	760	798	40
39	390	429	468	507	546	585	624	663	702	741	780	819	41
40	400	440	480	520	560	600	640	680	720	760	800	840	42
41	410	451	492	533	574	615	656	697	738	779	820	861	43
42	420	462	504	546	588	630	672	714	756	798	840	882	44
43	430	473	516	559	602	645	688	731	774	817	860	903	45
44	440	484	528	572	616	660	704	748	792	836	880	924	46
45	450	495	540	585	630	675	720	765	810	855	900	945	47
46	460	506	552	598	644	690	736	782	828	874	920	966	48
47	470	517	564	611	658	705	752	799	846	893	940	987	49
48	480	528	586	624	672	720	768	816	864	912	960	1008	50
49	490	539	598	637	686	735	784	833	882	931	980	1029	51
50	500	550	600	650	700	750	800	850	900	950	1000	1050	52

Table showing the Price of any Number of Hours or Thousands, from One Hour or 1,000 to Eighty-Five Hours or 85,000, from 5 $\frac{1}{2}$ d. to 9d. per Hour or Thousand.

TH.	5 $\frac{1}{2}$ d.	6d.	6 $\frac{1}{2}$ d.	6 $\frac{3}{4}$ d.	7d.	7 $\frac{1}{2}$ d.	7 $\frac{3}{4}$ d.	7 $\frac{1}{2}$ d.	8d.	8 $\frac{1}{2}$ d.	8 $\frac{3}{4}$ d.	9d.
2	s. 0	d. 11	s. 1	d. 0	s. 1	d. 2	s. 1	d. 3	s. 1	d. 4	s. 1	d. 5
3	s. 1	d. 11	s. 1	d. 1	s. 1	d. 3	s. 1	d. 5	s. 1	d. 6	s. 1	d. 7
4	s. 1	d. 11	s. 1	d. 1	s. 1	d. 4	s. 1	d. 6	s. 1	d. 7	s. 1	d. 8
5	s. 2	d. 11	s. 2	d. 1	s. 2	d. 5	s. 2	d. 7	s. 2	d. 8	s. 2	d. 9
6	s. 2	d. 10	s. 2	d. 0	s. 2	d. 6	s. 2	d. 8	s. 2	d. 9	s. 2	d. 10
7	s. 3	d. 10	s. 3	d. 0	s. 3	d. 7	s. 3	d. 9	s. 3	d. 10	s. 3	d. 11
8	s. 3	d. 10	s. 3	d. 0	s. 3	d. 8	s. 3	d. 10	s. 3	d. 11	s. 3	d. 12
9	s. 4	d. 9	s. 4	d. 0	s. 4	d. 9	s. 4	d. 11	s. 4	d. 12	s. 4	d. 13
10	s. 4	d. 9	s. 4	d. 0	s. 4	d. 10	s. 4	d. 12	s. 4	d. 13	s. 4	d. 14
15	s. 7	d. 7	s. 7	d. 10	s. 7	d. 13	s. 7	d. 15	s. 7	d. 16	s. 7	d. 17
20	s. 9	d. 7	s. 9	d. 10	s. 9	d. 14	s. 9	d. 17	s. 9	d. 18	s. 9	d. 19
25	s. 11	d. 11	s. 11	d. 12	s. 11	d. 15	s. 11	d. 18	s. 11	d. 19	s. 11	d. 20
30	s. 14	d. 4	s. 14	d. 15	s. 14	d. 16	s. 14	d. 19	s. 14	d. 20	s. 14	d. 21
35	s. 16	d. 9	s. 16	d. 17	s. 16	d. 19	s. 16	d. 21	s. 16	d. 22	s. 16	d. 23
40	s. 19	d. 2	s. 19	d. 20	s. 19	d. 21	s. 19	d. 23	s. 19	d. 24	s. 19	d. 25
45	s. 21	d. 6	s. 21	d. 22	s. 21	d. 23	s. 21	d. 25	s. 21	d. 26	s. 21	d. 27
50	s. 23	d. 11	s. 23	d. 25	s. 23	d. 27	s. 23	d. 28	s. 23	d. 29	s. 23	d. 30
55	s. 26	d. 4	s. 26	d. 27	s. 26	d. 29	s. 26	d. 30	s. 26	d. 31	s. 26	d. 32
60	s. 28	d. 9	s. 28	d. 30	s. 28	d. 32	s. 28	d. 33	s. 28	d. 34	s. 28	d. 35
65	s. 31	d. 13	s. 31	d. 32	s. 31	d. 35	s. 31	d. 36	s. 31	d. 37	s. 31	d. 38
70	s. 33	d. 6	s. 33	d. 35	s. 33	d. 37	s. 33	d. 39	s. 33	d. 40	s. 33	d. 41

THE NUMBER OF LINES CONTAINING A THOUSAND ENS

In any body of type, from Pica to Nonpareil, and from 10 to 40 Pica ems in width.

Pica ems in width.	NUMBER OF LINES CONTAINING A THOUSAND LETTERS.						
	Pica.	Small Pica.	Long Primer.	Bourg.	Brevier.	Minion.	Nonp.
10	50	48	40	36	32	29	25
11	45	40	36	32	29	27	23
12	42	36	32	29	27	24	21
13	38	33	30	27	25	23	19
14	36	31	29	25	23	21	18
15	33	29	29	23	23	20	17
16	31	27	25	22	20	19	16
17	29	26	23	21	19	17	15
18	28	24	22	20	18	16	14
19	26	23	21	19	17	15	13
20	25	22	20	18	16	15	13
21	24	21	19	17	15	14	12
22	23	20	18	16	15	13	12
23	22	19	17	15	14	13	11
24	21	18	17	15	13	12	10
25	20	17	16	14	13	12	10
26	19	17	15	14	12	11	10
27	19	16	15	13	12	11	9
28	18	15	14	12	12	11	9
29	17	15	14	12	11	10	9
30	17	14	13	12	11	10	8
31	16	14	13	11	10	10	8
32	16	14	12	11	10	9	8
33	15	13	12	11	10	9	8
34	15	13	12	10	9	9	7
35	14	12	11	10	9	8	7
36	14	12	11	10	9	8	7
37	14	12	11	10	9	8	7
38	13	11	10	9	9	8	7
39	13	11	10	9	8	8	6
40	12	11	10	9	8	7	6

PRICES OF JOB PRINTING.

The following prices are given simply as a guide. They are the lowest charges that ought to be made, even where printing offices are furnished with every facility for executing cheap printing.

<i>Posters.</i>	50	100	200	per 100 after.
Double Royal ...	8s. 6d.	13s. 6d.	19s. 6d.	6s. 6d.
Double Demy ...	7 6	11 6	17 0	5 6
Double Crown ...	6 0	9 6	14 0	4 6

If in coloured ink—Double Royal and Double Demy, 2s. to 3s. 6d. per 100 extra. Double Crown, 1s. to 2s. 6d. per 100 extra. If in two colours—25 to 50 per cent. extra.

Posting and other bills.

Royal broadsides ...	6 0	8 6	12 6	4 0
„ folio ...	4 6	6 6	9 6	3 0
„ quarto ...	3 6	4 6	6 6	2 0
Demy broadsides ...	5 0	7 6	11 0	3 6
„ folio ...	4 0	5 6	8 0	2 6
„ quarto ...	3 0	4 0	5 6	1 6
Crown broadsides ...	4 0	6 6	10 0	3 6
„ folio ...	3 0	4 6	7 0	2 3
„ quarto ...	2 6	3 0	4 6	1 6

Sale Bills and others containing an extra quantity of matter will stand a charge of at least 25 per cent. more than the above prices.

Hand Bills on common paper.

	1000	2000	5000	per 1000 after.
Crown 8vo. ...	4 6	6 6	12 6	1 6
Demy 8vo. ...	5 6	8 0	15 6	2 0

Circulars on writing paper, fly leaf.

	50	100	200	per 100 after.
Large Post quarto	4 6	6 6	10 6	4 0
„ 8vo.	3 0	4 0	6 6	2 6
Small Post quarto	3 6	5 0	8 6	3 6
„ 8vo.	2 6	3 6	5 6	2 0

Memorandums.

Large Post 8vo. ...	1 6	2 0	3 0	1 0
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Billheads—Foolscap.

6mo. ...	1 6	2 0	3 0	1 0
4to. ...	2 0	3 0	4 6	1 6
Two-thirds of long folio	2 6	4 0	6 0	2 0
8vo. Large Post ...	1 6	2 0	3 0	1 0

Common Cards.

	50	100	200	500	1000	per 1000 after.
Small ...	1/6	2/0	3/0	5/0	9/0	8/0
Large ...	2/0	2/6	3/6	6/6	12/0	10/6

CORRECTED FOR PRESS.

“/ *Cape/* Madras, to which Clive had been ~~and~~
 appointed, was, at this time, per^haps, ~~the~~
 the first in importance of the Com-
 pany's settlements.)

Run on/ In the preceding century, Fort
italics/ Saint George had arisen on a
tr./ spot barren beaten by a raging
by/ surf, and in the neighbourhood a
 town, inhabited many thousands
 of natives, had sprung up, as they
 spring up in the East, with the
 rapidity of the Prophet's gourd. *Le.*

N.P./ There were already in the suburbs
 many white villas, each surrounded
 by its garden, whither the agents of
 the company retired, after the labours
 of the desk, to enjoy the cool breeze
 which springs up at sunset from the
 Bay of Bengal. The habits of these
 mercantile grandees appear to have
 been more profuse, luxurious, and
 ostentatious than those of the high
 judicial and political functionaries
 who have succeeded them.

and the
warehouse *Lord*
 Clive, by LORD MACAULAY.

READY FOR PRESS.

“MADRAS, to which CLIVE had been appointed, was, at this time, perhaps, the first in importance of the Company’s settlements. In the preceding century, Fort *St. George* had arisen on a barren spot beaten by a raging surf; and in the neighbourhood a town, inhabited by many thousands of natives, had sprung up, as towns spring up in the East, with the rapidity of the prophet’s gourd.

“There were already in the suburbs many white villas (each surrounded by its garden), whither the agents of the Company retired, after the labours of the desk and the warehouse, to enjoy the cool breeze which springs up at sunset from the Bay of Bengal. The habits of these mercantile grandees appear to have been more profuse, luxurious, and ostentatious than those of the high judicial and political functionaries who have succeeded them.”—*Lord Clive, by* LORD MACAULAY.

ACCENTS.

The accented letters are—

Acute	á é í ó ú	Disæresis	ä ë ï ö ü
Grave.....	à è ì ò ù	Long	ā ē ī ō ū
Circumflex	â ê î ô û	Short	ǣ ǿ ȳ ŭ

French ç, Spanish ñ, Welsh ŵ and ŷ.

SIGNS.

The following are a few of the most common signs—

lb, Pound weight.	+ Plus, or more.
ψ, Per, each.	— Minus, or less.
@, at, or to.	= Equal.
£, pound sterling, pound l.	× Into, or with.
/, Solidus, shilling mark.	÷ by, sign of division.
ₐ/c, Account.	° Degree.
%, Per cent.	' Minute.

POINTS, &c.

, Comma	' Apostrophe	& Short "and"
; Semicolon	- Hyphen	() Parentheses.
: Colon	! Admiration	[] Brackets
. Full point	? Interrogation	☞ Fist.

ODD SORTS.

Superior letters, and figures, are those which stand at the top of the type, thus—^a, ^b, ^c, ^d, ¹, ², ³, ⁴.





Inferiors stand at the bottom, thus—_a, _b, _c, _d, ₁, ₂, ₃, ₄.

Fractions are cast as single types— $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{3}$; or as half-types, called split fractions—¹/₁, ²/₂, ³/₃.

METAL RULES.

En — Em — 2-em — 3-em — 4-em —

BRACES.

2-em  3-em  4-em  Superior 

USEFUL RECEIPTS,

ETC.

To make Pocket Mucilage, boil one pound of the best white glue and strain very clear; boil also four ounces of isinglass, and mix the two together; place them in a water bath (glue kettle) with half a pound of white sugar, and evaporate till the liquid is quite thick, when it is to be poured into moulds, dried, and cut into pieces of convenient size. This immediately dissolves in water, and fastens paper very firmly.

Quick Drying Preparation for Printers' Inks to be used on Bookbinders' Cases. One ounce beeswax, $\frac{1}{4}$ oz. gum arabic dissolved in sufficient acetic acid to make a thin mucilage, $\frac{1}{4}$ oz. Brown's japan, $\frac{1}{4}$ oz. asphaltum varnish—incorporated with 1 lb. of woodcut ink.

Receipt for Making Printers' Rollers.—10 $\frac{1}{2}$ lbs. genuine Irish glue, 2 $\frac{1}{2}$ gallons black treacle or honey, 1 lb. India-rubber dissolved in alcohol, 2 oz. Venice turpentine, 12 oz. glycerine, 4 oz. strong vinegar.

Soak glue over night, and drain in the morning by means of a covered colander for one hour. Boil treacle, and skim for twenty minutes. Add the India rubber, and stir until it combines with the treacle. Add glue, and boil for forty minutes, occasionally stirring the mass. Put in Venice turpentine and glycerine; boil six or seven minutes, and pour.

This is the receipt for making the mysterious "black composition" so durable and elastic, and known to but very few persons until recently.

If properly handled it cannot be excelled, and contains every element required in a roller. Caution must be taken that only purified rubber is used.

Printers' Lye.—Table salt 2 oz., unslacked lime 2 lbs., Scotch washing soda (bruised) 2 lbs. Put together in 3 gallons of water, stir well together, when settled ready for use.

This lye, if prepared carefully, is very strong; and will wash off almost any colour.

To give Printers' Dark Inks a Bronze or Changeable hue.—Take 1 $\frac{1}{2}$ pounds gum shellac and dissolve it in 1 gallon 95 per cent. alcohol or cologne spirits for 24 hours; then add 14 oz. aniline red; let it stand a few hours longer, when it will be ready for use. Add this to good blue, black, or other dark inks, as needed, in quantities to suit, when, if carefully done, they will be found to have a rich bronze or changeable hue.

Gum for Backing Labels.—Take any quantity of clear pure dextrine and mix it with boiling water until it assumes the consistency of ordinary mucilage. Apply thinly with a full-bodied, evenly-made, and wide camel's hair brush. The paper should not be too thin or unsized, The preparation will dry quickly, and adhere when slightly wet.

No more of the dextrine should be mixed at one time than can be used at once, as it cannot be remelted easily.

To make Gum.—1 lb. gum arabic dissolved in one quart cold soft water; strain through flannel.

Another method. — 1 lb. gum arabic dissolved in three pints cold soft water, one tablespoonful of glycerine, and two ounces of honey; strain through flannel.

Lay the sheet to be gummed on a board, and gum over evenly with a piece of fine sponge.

A few drops of sulphuric acid will prevent any decay in solutions of gum arabic. By this acid the lime in the gum is precipitated as a sulphate.

French Gold Printing.—French copal varnish one ounce; mastic varnish, quarter of an ounce; mix together and add twenty drops to the black ink table, and distribute; take an impression and apply with wool, gold leaf, Dutch metal, or bronze. Apply the bronze with cotton wool and rub hard over the black ink. After each fifty printed, wipe off the superfluous gold from the type with a silk handkerchief.

How to treat Wood Type.—To prevent warping, all very large wood type should be set up on the edge when put away, so that both sides may be equally exposed to the air. In cleaning it, neither ley nor water should be employed under any circumstances. Turpentine, camphene, benzine, or kerosene oil may be used; but turpentine and camphene are the best. Procure a small, shallow pan; lay the forme flat on a board; pour about six tablespoonfuls of turpentine into the pan; touch the face of the brush to the turpentine, and pass it quickly over the forme before it evaporates. Six or eight spoonfuls of fluid will be found sufficient to clean a large forme, if thus used.

To make a Strong and Durable Paste.—One full quart of good Wheat Flour; two gallons Cold Water. Mix, and rub out with the hands all lumps that are formed by the flour. Then add about one-quarter of a pound of pulverized alum, and boil the whole together

eight or ten minutes, or until the mass thickens, stirring it well all the time. Now add a quart of hot water, and boil until the paste becomes thick again and of a pale brownish tint. When well made, it will be perfectly clear and free of lumps, and keep from ten to fifteen days.

Transfer Varnish.—Take equal quantities of fir balsam and spirits turpentine. Mix, shake well, and set in a warm place until clear. Used in Decalcomanie, and for maps, prints, drawings, and other articles of paper; and also to prepare tracing papers, and to transfer engravings.

To make Rice Glue.—This useful cement is made by mixing rice flour thoroughly with cold water, and then gently boiling it. It is beautifully transparent. Papers pasted together by means of this cement will sooner separate in their own substance than at the joining. It is in every respect preferable to common paste made with wheat flour for almost every purpose to which that article is usually applied. It answers well, in particular, for pasting into books the copies of writings taken off by copying machines on thin copying paper.

With this composition, made with a comparatively small quantity of water that it may have a consistency similar to plastic clay, models, busts, statutes, bas-reliefs, and the like may be formed. When dry the articles made of it are susceptible of a high polish; they are also very durable.

A Quick Dryer for Printing Inks.—Two parts jappanners' gold size, 1 part copal varnish, and 2 parts elber powder (*RADIX CARLINÆ*, or carline thistle). Incorporate these ingredients well together with a small spatula, and use in quantities to suit the consistency of the ink employed, and the rapidity with which it is desired to dry. The usual proportion is a small teaspoonful of the dryer to about an ounce of average good ink.



